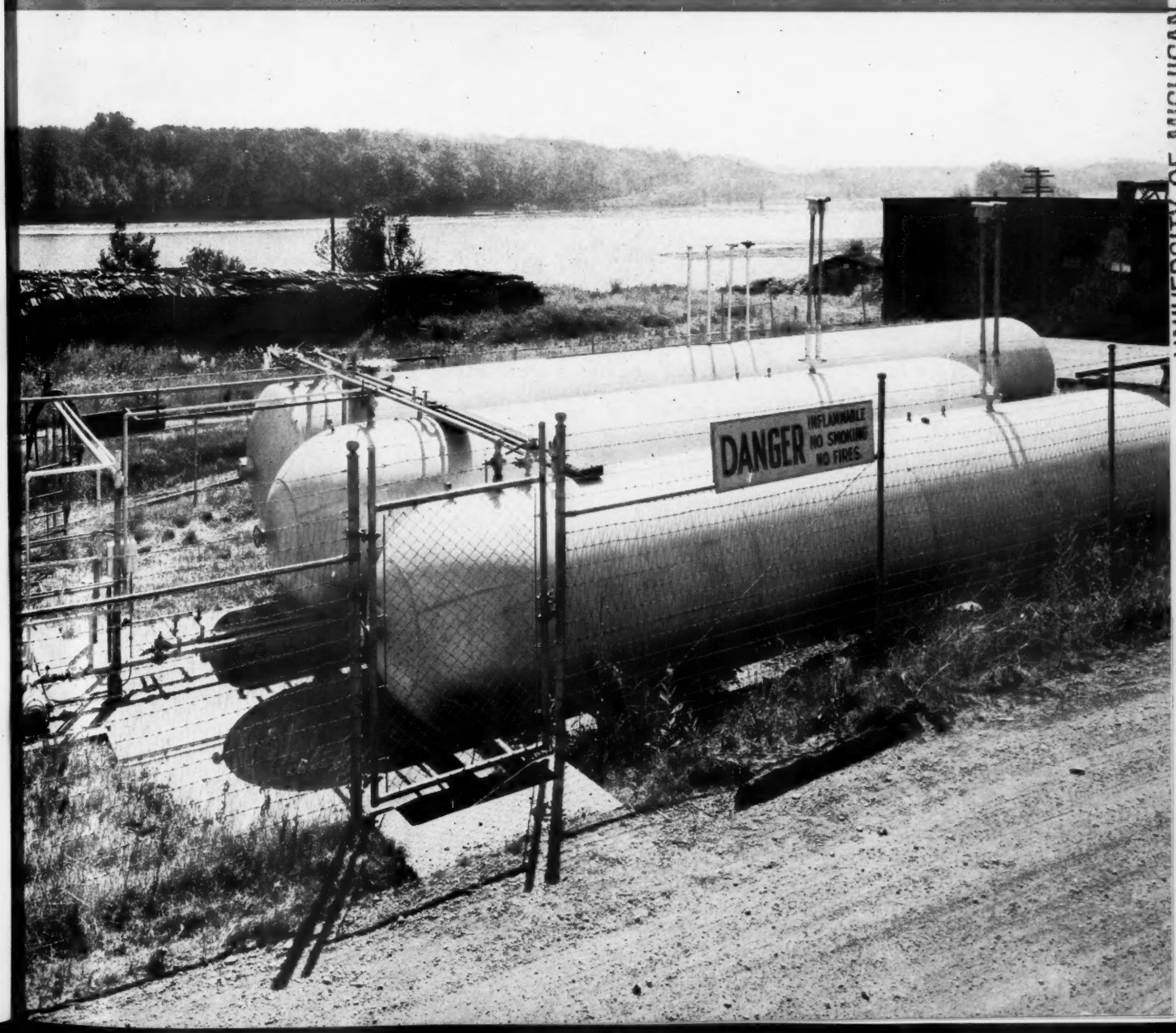
ST ENGINEERING
RARY

SEP 19 1949

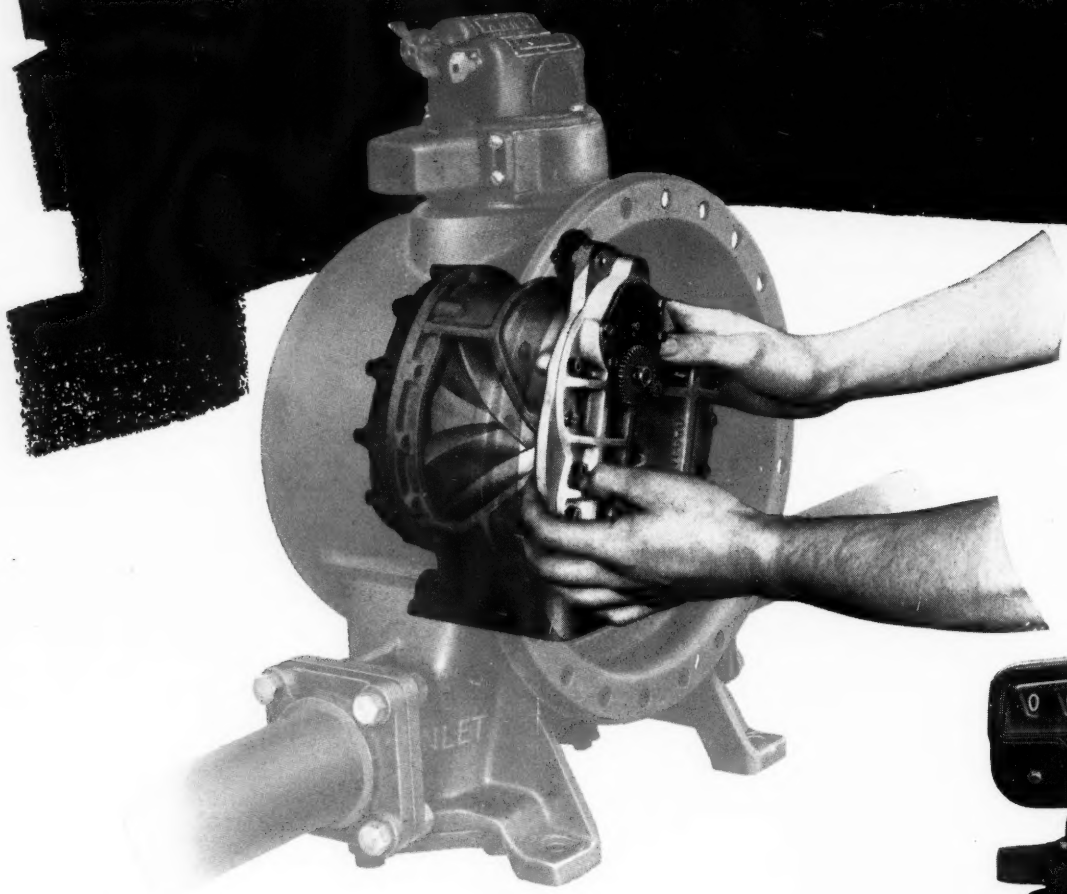
SEPTEMBER
1949

fueloil & oil heat



UNIVERSITY OF MICHIGAN LIBRARIES

READILY REPLACEABLE MEASURING ELEMENT



—reduces down-time on loading racks and pipe lines

Though seldom required, periodic inspection and cleaning of the new Brodie BiRotor Meters is easily accomplished without removing the meter from the line or disturbing existing line connections. A complete and interchangeable measuring unit, compactly mounted within a welded All-Steel meter housing is readily accessible at all times. By simply installing a spare measuring element, loading rack and pipe-line shutdowns are reduced to a minimum. All-Steel housing avoids damage from shocks and impacts, further contributing to longer trouble-free service life. Designed for high sustained accuracy and efficiency, Brodie BiRotor Meters are *built to last.* Investigate fully, today. Write for complete details.

- ALL-STEEL HOUSING
- PRECISION DRY ADJUSTMENT
- STREAM FLOW DESIGN
- FRICTION-FREE OPERATION
- TRUE-ROTARY PERFORMANCE

ALL-STEEL

BRODIE BiRotor METERS

TRUE-ROTARY

RALPH N. BRODIE CO., INC. 61ST & LOWELL, OAKLAND 8, CALIFORNIA

Division Offices: CHRYSLER BLDG., NEW YORK CITY • 59 E. VAN BUREN, CHICAGO 5 • 2101 S. SAN PEDRO, LOS ANGELES 11, CALIFORNIA
302 SOUTH PEARL ST., DALLAS 1, TEXAS • 221-9TH AVE. NORTH, SEATTLE 9, WASH. • *REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES*

VOL. 8, NO. 5

fueloil & oil heat

SEPTEMBER 1949

Names in the News

W. A. *Matheson, Jr.* has joined Perfex Corp., Mliwaukee, Wis., as manager of the newly-created New Products Division. As such he will handle subcontracting for fill-in production and research for new products. Mr. Matheson is a graduate of Lehigh University and served three years in the armed forces during the war. Most recently he was manager of contract sales for Williams Oil-O-Matic.

Gaylord W. Schultz and *James H. Eldridge* have been appointed Middle West regional manager and district sales manager, respectively, by Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich. Mr. Schultz has been in the heating business since 1936, will make his headquarters in Kenosha, Wis., and will be responsible for the Northwest region. Mr. Eldridge, also in the heating business for thirteen years, last served with Herndon Sales and Service, Chicago Timken distributor. His territory will include North and South Dakota, portions of Iowa and Minnesota.

Frank J. McCusker has joined Fitzgibbons Boiler Co., New York 17, N. Y., as sales representative in the Philadelphia area. He joins Edgar N. Black III and William C. Wetherstine, Jr. in the company's Philadelphia office. Mr. McCusker's extensive heating background began in 1926 when he joined The Trane Co. as manager, eastern sales division and

CONTENTS

SUBJECT	PAGE	AUTHOR
Margins and Marketing	55	ROBERT G. ELMSLIE
Buying the Right Oil Truck	57	GEORGE CLEMENT
Finding the Prospect	59	RAY HORAN
Rating Service Men	61	ROBERT GRAY
Gas on Wheels	63	A. E. COBURN
Vaporizing Pot Type Burners	65	CHARLES H. BURKHARDT
Oil Preheating Problem	69	
Pictures Help the Sale	70	LYNE S. METCALFE
A Question of Draft	72	FRED FEIGENBAUM
Heat for Small Homes	78	
Worst Kind of Air Binding	80	

NEWS

OHI and YMCA Combine on Sales Course	68
Department of Labor Fueloil Prices	78
Canada Refuses Gas for Northwest	82
OHI of NE Sponsors Uniform Accounting	82
Reader Views on Brown-Connolly Article	84
Three Eastern Cities Get Gas OK	90
Iowa Farm Furnaces 38% Oilfired	92

DEPARTMENTS

5	Names in the News
8	Editorial Leaks
10	Oilheating Trends
96	Industry Groups
104	Manufacturers' Activities
118	Everyday Snags
126	New Products
145	Readers' Problems

FRONT COVER: Portraying a transition in fuels is this scene of a storage yard of the Multnomah Fuel Co., long-time fuel merchandiser in Portland, Oregon. In the foreground are storage tanks for liquid petroleum gas, which the company retails along with fueloil, with slab wood, still widely used for heating in the area, piled in the background. Multnomah's activities in merchandising LPG are described in the article beginning on page 63.

COPYRIGHT 1949, HEATING PUBLISHERS, INC. ALL RIGHTS RESERVED. NO PART MAY BE REPRINTED IN ANY FORM WITHOUT WRITTEN PERMISSION.
Acceptance under Sec. 34.64, P. L. & R., authorized.

VOLUME 8, NUMBER 5 OF FUELOIL & OIL HEAT. PUBLISHED MONTHLY BY HEATING PUBLISHERS, INC., BALTIMORE, MD., AND 232 MADISON AVE., NEW YORK 16, N. Y., SUCCESSOR TO FUELOIL JOURNAL (1922) AND AIR CONDITIONING & OIL HEAT (1928), SEPTEMBER, 1949.

HEATING PUBLISHERS, INC., 232 Madison Ave., New York 16
Phone: LExington 2-4566 & 4567

LEOD D. BECKER, *Chairman, Board of Directors*

A. E. COBURN, *Editor* — ROBERT GRAY, *Business Manager* — A. G. WINKLER, *Advertising Manager*

Lee Steedle, Advertising

Mid-West Manager: Harold J. Hannigan
549 W. Washington Blvd., Chicago 6 Phone: Central 6-0545

Pacific Coast Representative: Don Harway
1709 West 8th St., Los Angeles 14, Cal. Phone: Fairfax 8576
57 Post St., San Francisco 4, Cal. Phone: Yukon 6-1069

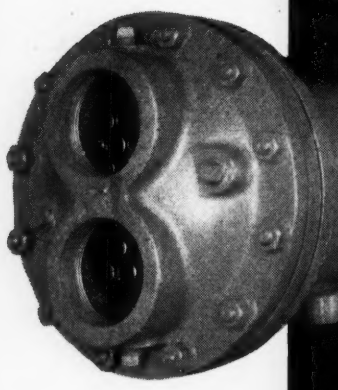
MEMBER CCA

Yearly: $3.00

Canadian: $4.00

single copy: this issue 35¢

UNIVERSITY OF MICHIGAN LIBRARIES



hot water *in a hurry!*

Where sudden hot water pulls—or an unpredictable time schedule—are in the order of things, install

Paracoil

INSTANTANEOUS WATER HEATERS

TO KEEP PACE WITH THE LOAD—ALL THE WAY!

No storage tank is necessary—they have enough, and more, heating surface built into them to heat the water as fast as it is drawn! Thousands in operation.

If you have such a problem, we have the answer! Stock designs permit quick delivery-at prices lower than you think.

This bulletin, in addition to tables of capacities and physical dimensions on our U-Tube designs, contains a wealth of practical, worthwhile engineering data on how to size, figure steam requirements, and pipe up PARACOIL INSTANTANEOUS WATER HEATERS. YOUR COPY AWAITS YOU!

Write today for a copy of our new Bulletin 70 Section I, describing this line of Paracoil Water Heaters.

DAVIS ENGINEERING

CORPORATION

1064 East Grand Street, ELIZABETH 4, NEW JERSEY

30 Rockefeller Plaza, NEW YORK 20, NEW YORK

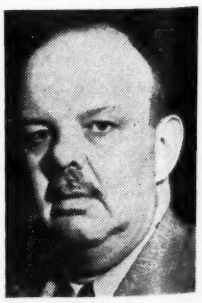
AGENTS IN PRINCIPAL CITIES

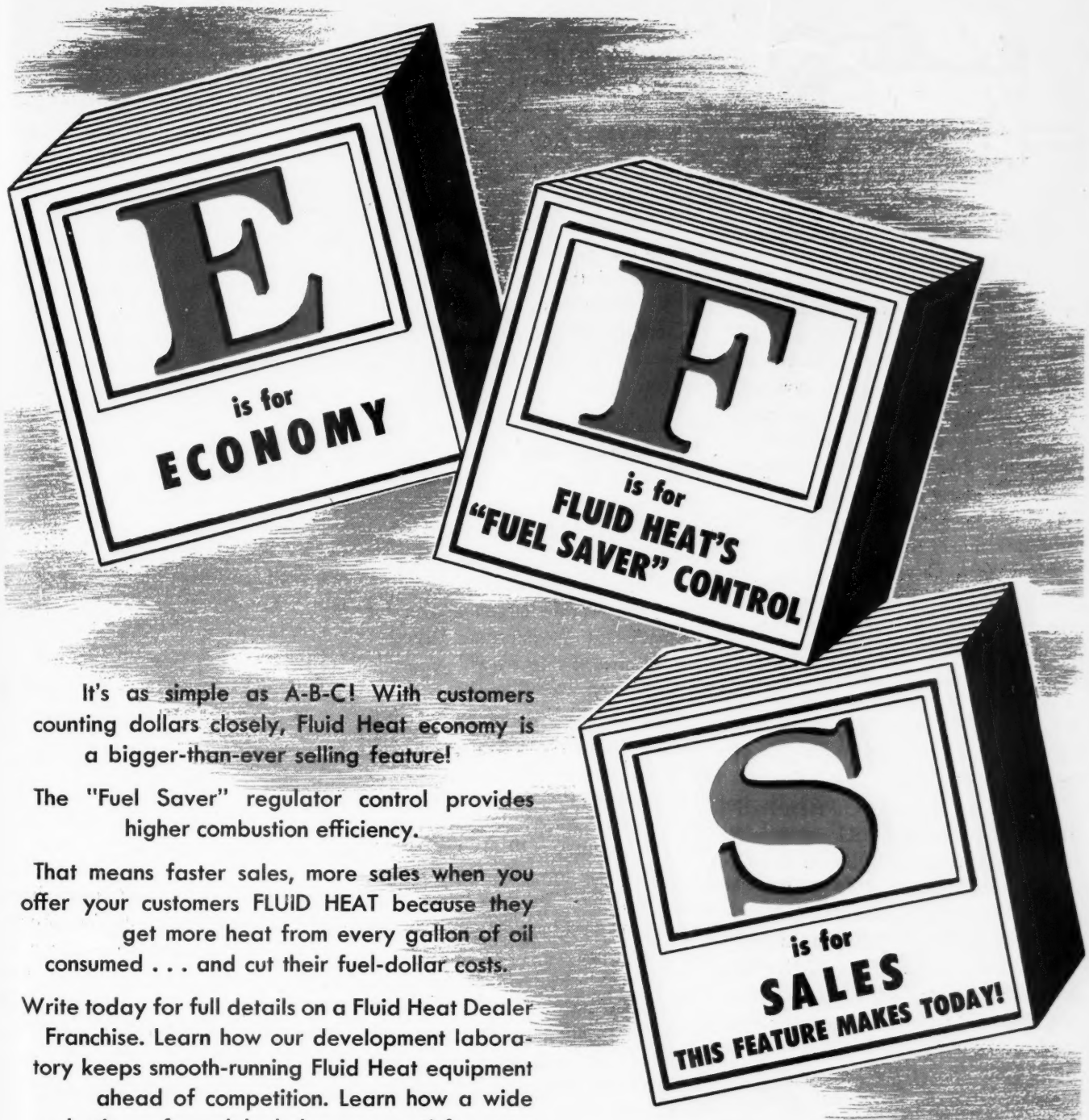
then became associated with John J. Nesbitt Co. in a selling capacity. From 1934 to 1938 he represented the Hajoca Corp. of Rosslyn, Va. and then began eight years of service with the U. S. Army. Immediately after the war Mr. McCusker became Philadelphia district representative for Iron Fireman Mfg. Co., a position which he resigned to join Fitzgibbons.

Daniel D. Kelly has been appointed a sales engineer for L. J. Mueller Furnace Co., Milwaukee, Wis. A native of St. Louis and for the past twelve years a heating and air conditioning sales engineer in that area, Mr. Kelly will operate out of Mueller's Central District Headquarters in St. Louis and cover parts of Missouri, Nebraska and Iowa. In the territory he will be associated with R. M. Rosebrough, Central District Sales manager, and J. S. Rosebrough.

W. E. Conkright has been appointed sales promotion and advertising manager, General Controls Co., Glendale, Calif. His background, including connections with International Harvester and the Harnischfeger Corp., covers long experience in industrial advertising and promotion.

Fred H. Gallup has been named manager of distributor sales, automatic heating division, General Electric Company's Air Conditioning Department, Bloomfield, N. J. A native of Hudson Falls, N. Y., Mr. Gallup served as sales manager, Bryant Air Conditioning Corp., Philadelphia from 1937 to 1940 and for the next four years was associated with the Timken oilburner organization in New York. For two and a half years ending in August 1947 he was sales manager of Chrysler Airtemp distributors.





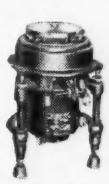
It's as simple as A-B-C! With customers counting dollars closely, Fluid Heat economy is a bigger-than-ever selling feature!

The "Fuel Saver" regulator control provides higher combustion efficiency.

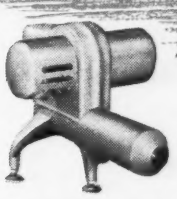
That means faster sales, more sales when you offer your customers FLUID HEAT because they get more heat from every gallon of oil consumed . . . and cut their fuel-dollar costs.

Write today for full details on a Fluid Heat Dealer Franchise. Learn how our development laboratory keeps smooth-running Fluid Heat equipment ahead of competition. Learn how a wide selection of models helps you satisfy more people, make more sales!

FLUID HEAT OIL BURNER DIVISION,
ANCHOR POST PRODUCTS INC.,
6700 Eastern Avenue, Baltimore 24, Maryland.



ROTARY BURNERS

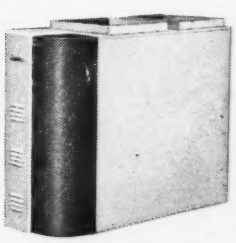


PRESSURE BURNERS

fluid heat
OIL BURNER
"WORLD'S ECONOMY CHAMPION"

Manufactured by Anchor Post Products, Inc.
Baltimore 24, Md. Established 1892

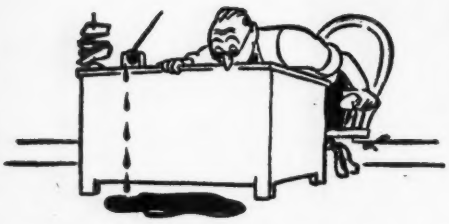
BOILER BURNER UNITS



AIR-CONDITIONING FURNACES

fueloil & oil heat

UNIVERSITY OF MICHIGAN LIBRARIES



Editorial Leaks

It long has been a mystery to those who live in the oilheating business why two towns side by side have totally different rules governing an oilburner installation. Fire records fail to show any safety advantage for the town with stringent and voluminous rules over the community that accepts National Board of Fire Underwriters regulations. The chief difference is in the price the citizens have to pay for their burners.

New York City, for example, has regulations that fill a small book to govern the installation of an oilburner. Examinations for license to work in the city have to be so concerned with a man's knowledge of the rules there is no time to test his ability to follow them. Neighboring communitiees have no more trouble with half the regulations.

It is heartening to see Oil Heat Institute of New England tackle its avowed aim of unifying the rules on the six New England States. Past work with Massachusetts State authorities has produced a surprisingly simple, understandable and reasonable safety code for the state. Nobody claims the rules are perfect. Some 22 revisions are to be considered at the next meeting of the state authorities, and future meetings will consider other changes as they seem indicated. The aim always is to simplify the code for (a) better understanding and compliance, and (b) easier enforcement. Result: Massachusetts, the seventh state in population, is the second state in oilburner installations.

Not all Institute groups cover the wide area served by New England OHI, and unfortunately few have the enviable record of close cooperation with fire protection authorities. At least the latter deficiency can be corrected, and with profit to the community and the oilheating industry locally.

This industry wants no favors. It must demand proper and reasonable safeguards against hazardous installations and shoddy equipment, but equally it must oppose any local fire department writing detailed specifications and establishing road blocks against adequate and economical installations.

◈

Away back in Old England—in 1306 to be exact—Edward I issued a proclamation declaring that anyone caught burning coal would be put to death. It was believed the gases from burning coal were poisonous.

There should be a moral in that for oilburner men, but it escapes us at the moment.

◈

While flash bulbs popped, Mayor O'Dwyer of New York cracked an oversize valve on August 22, to start the flow of Texas gas into New York City. The introduction of natural gas to Staten Island marks the first appearance of the fuel in the world's largest market for automatic heating equipment. The other four counties of the city will get gas in due time.

Simultaneously, the American Gas Association announced that utilities serving about three million customers lifted househeating restrictions during the year ended May 1. Slightly less than half the country's 19.75 million gas customers were unrestricted at that time, and something more than half will be free of househeating restrictions by the end of the year.

The gas industry is readying its attack on the househeating market. There will be the usual fanfare coupled with concentrated sales campaigns in each area as gas volume is increased and restrictions dropped. There is no indication that gas will be competitive in price in most territories, but that is a detail. Fueloil was not competitive with coal in the era of its growth to general acceptance. Markets are gained by selling effort, not by price alone, and this industry is long overdue on its road back to an aggressive merchandising business.

◈

Our friend the field man was in the other day, and after the preliminary greetings he got down to the cold, hard facts—as he sees them, at least.

"These dealers, your friends and mine, are too fat," he snorted. "Since you ask me, business is good, but only half as good as it should be. I bust a blood vessel, catch what-for from the sales-manager, and miss my quota by an eyebrow. Can I get these guys off their fannies? Naw! They tell me to keep cool. The season won't open for a month, and what's the use of trying to sell in the summer.

"Look, we got a swell program. We got dealer helps clear up to there. About all a dealer has to do is give us permission, and we'll practically sell the equipment for him. You'd think we were trying to break up his home the way he fights us, and all we are trying to do is help him get business. 'Next month, Johnnie,' they say. 'Next month the season starts.' A couple of live dealers in a town would have all the business before the 'season' opened.

"These are the guys who used to be red hot. These are the guys who used to *sell* heating equipment while the old-time heating contractor was waiting for the season to open. Now they are waiting with him. You know what I think?"

We didn't.

"These dealers are too fat. They got maybe a couple million gallons of oil business. They got problems, but keeping the rent paid ain't one of them. They'll eat if they don't sell twenty burners in July, like I want them to, and the devil himself can't prod them into doing the things that got the business when they needed it. They should miss a few meals each week. It would improve the industry's business, but quick."

And what could we say? He was talking about the man we love.

◈

To save bookkeeping in their cooperative advertising program, the Polaroid Corp., Cambridge, Mass., has hit upon the scheme of issuing Ad Scrip. This private money is issued in denominations of $5 and $1.

When an order is received the company sends the dealer scrip equal to 5% of the value of the order. He can tell what his co-op advertising fund is by counting the scrip. When the dealer runs an ad under the plan, he simply tears out the ad, attaches the invoice and scrip for half the amount. The company then sends its check for the full value of the scrip. New dealers get scrip in advance for three months' estimated business.

GAUGE CAGE
Clear, oil-proof, shatter-proof plastic. Tested 25 lb. pressure.
GAUGE READING VISIBLE ALL ANGLES
LEVEL TELL
Visible from both sides and end of tank.
VENT PIPE OPENING
Vent pipe screws in here.
NO LEAK
threaded fit.
VENTALARM GAUGE ®
For 275 gal. cellar tanks. State depth.
SIZES
2" x 1¼"
1½" x 1¼"
(For 1" Vent Line reducer can be used at top)
MALE THREAD
Screws into tank vent opening as usual.
TRADE LIST PRICE COMPLETE
$2.70
SIGNAL WHISTLE STEM
Projects into tank in usual manner.
GAUGE ARM
Strong steel rod stock.
GAUGE ARM HOLDER
Strong, rugged cold rolled steel rod.
FLEXO-JOINT
Flexible, coil spring insert is self-aligning. Bends, then straightens itself out. Allows easy installation regardless of amount of oil in tank.
ALWAYS FLO
Coated cork.
NOJAM PIVOT POINTS
Foolproof pinned joints.

"It looks like a hot number!"

That's what we said last May when we first advertised this new unit combining

VENTALARM® SIGNAL and a TANK GAUGE

But we didn't know how hot! Things had begun to get warm around the time of the National Oil Show in Boston this year when many of you actually saw the VENTALARM GAUGE. You saw how easily it could be screwed into the vent opening of a tank; how easy it was to read the gauge from all angles.

THEN THE SAVING OF ABOUT $2.00 PER BURNER INSTALLATION that comes with VENTALARM GAUGE really started the temperature rising and demand took a sharp upswing. It's a saving that's easy to figure. Instead of buying two items, you buy only one. There's $1.00 saved right there. The VENTALARM case acts as a reducer from 2" or 1½" tank opening to 1¼" vent pipe, so you save an additional 25c by eliminating need for reducing bushing. There's a saving in labor because you install one item instead of three. Then again, you need one less tank flange opening. So you save 30c to 40c on your tank order specifications. A real money saver!

Apologies to those of you who had to wait for your initial order. We hope "them days are gone forever." Production has been increased and we're all ready for you.

VENTALARM GAUGE is available for 275 Basement Tanks with depths of 22", 24", 26", 27", 42", 44", and 47". Specify tank depth and opening when ordering.

YOUR JOBBER has VENTALARM GAUGE along with the other VENTALARM Signals he now carries.

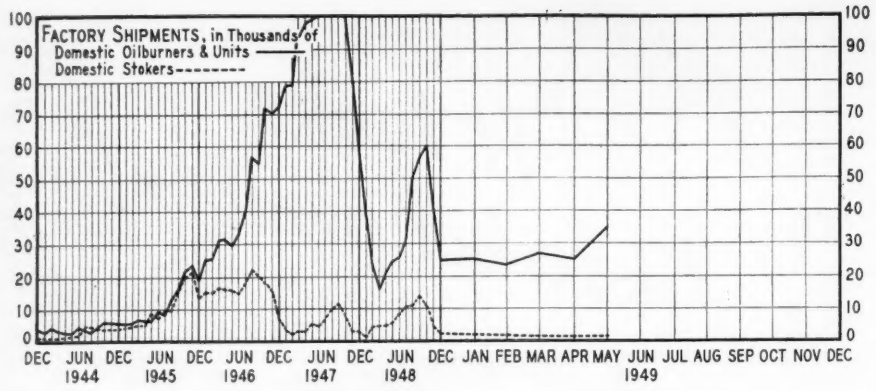
Fully protected by U.S. and Foreign patents.

UNIVERSITY OF MICHIGAN LIBRARIES

SCULLY SIGNAL COMPANY

76 First St., Cambridge 41, Mass.

Canadian Licensee: EMPIRE BRASS MFG. CO., LTD., London, Ontario

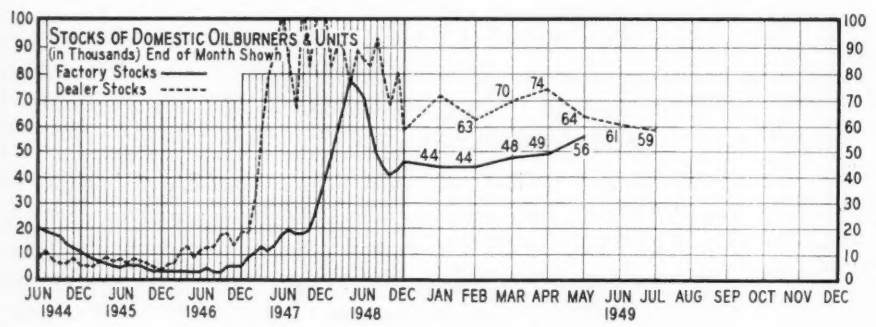

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948 1949

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT'S estimates of shipments are:

	JUNE			SIX MONTHS		
	1949	1948	Percent Change	1949	1948	Percent Change
Conversion	34,268	18,892	+ 81.4	143,996	102,426	+ 40.6
Boiler units	5,591	3,159	+ 77.0	16,901	13,429	+ 25.9
Furnace units	7,546	5,219	+ 44.6	28,919	33,904	— 14.7
All Domestic	47,405	27,270	+ 73.8	189.816	149,759	+ 26.7
Commercial	1.919	2,148	— 10.7	10.834	14,194	— 23.7
Total	49,324	29,418	+ 67.7	200,650	163,953	+ 22.4


STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
70 74 63 64 61 59 44 44 48 49 56
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948 1949

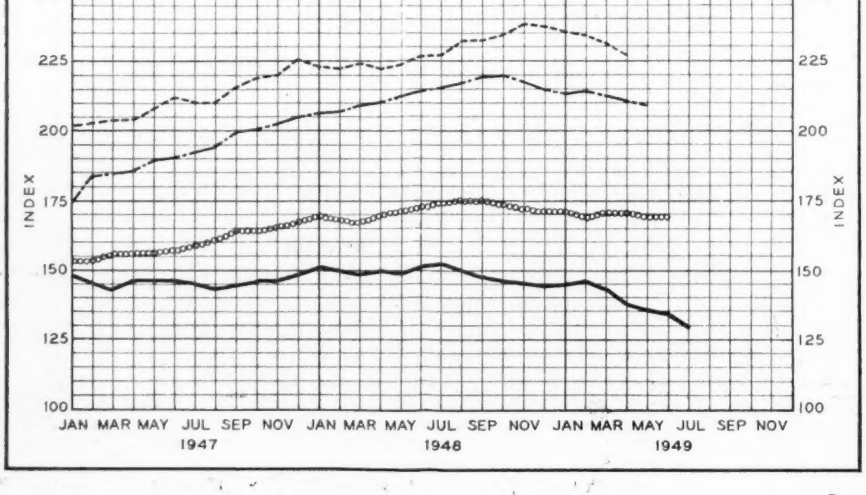
July Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
July Aver.	$323	$673	$567
June Aver.	326	679	566

Price Index: Conversion Burners: January 1940 is 100%

	WHOLESALE				RETAIL		
July	129.2	Six months ago	138.3	July	129.6	Six months ago	145.2
June	129.5	Year ago	146.2	June	134.1	Year ago	152.0

OILBURNER PRICES COMPARED TO GENERAL INDEXES


OILBURNER PRICES – RETAIL CONVERSION BURNER – JAN. 1940 = 100
INDIVIDUAL INCOMES – BUREAU OF LABOR STATISTICS – 1939 = 100
CONSTRUCTION COSTS – RESIDENTIAL – DEPT. OF COMMERCE – 1939 = 100
COST OF LIVING – BUREAU OF LABOR STATISTICS – 1935-39 = 100
INDEX
JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV
1947 1948 1949

Oilheating Trends

THE PRELIMINARY ESTIMATE of domestic oilburner and unit installations in July is 49,203, up 16% from 42,411 in the same month a year ago. This brings total installations for the seven months to 245,653 compared with 210,359, a rise of 17% for the year to date.

July installations were divided: New homes 19,386; Replacements of old oilburners 9,004; Conversions from other fuels 20,813. For the full seven months the division was: New homes 81,304; Replacements 41,221; Conversions from other fuels 123,128.

BURNER STOCKS: Stocks of domestic oilburners and units in dealer hands on August 1 were 59,045, a further continuation of the down-curve. Oilburner prices have dropped enough in the past year to encourage dealers to expect further declines. It is hard to see how this can go on much longer in view of the comparison of oilburner prices with the general economic indexes shown on the chart. Factory stocks on May 31, the latest available data, were 55,990, the highest point since July 1948.

SUMMER FILL UP: Fueloil distributors report that through August 1 they had provided summer fill-ups for 54% of consumer tanks. This is quite a drop from last year when the figure on the same date was 69%. However, at that time we pointed out that that degree of fill-up was unusually strong and resulted largely from anxiety over fueloil supply.

The marketers reporting this month point out that a little over 7% of their customers on automatic deliveries have asked that their tanks not be filled until fall, or in other words that the automatic system be suspended until the fuel is actually needed. Since about three-fourths of all domestic consumers are on an automatic delivery basis, this 7% who have held back are equivalent to about 5% of all fueloil customers. That then is the effect on consumer stocks of the price uncertainty so far as automatic delivery customers are concerned. There is no way to determine the effect of the price problem on the one-fourth of customers not on automatic delivery. Most of them do not as a rule fill up in the summer, so the maximum effect of price uncertainty on that group could hardly

account for more than another 5% in the overall picture. Thus the entire hold-back on the part of consumers will be in the range from 3 to 4 million barrels in the area East of the Rockies.

There was considerable concern at the start of the season over customers becoming dissatisfied when they received automatic deliveries on normal dates and learned a few days later that the price had dropped. Only 15% of the reporting fueloil distributors say that they had any significant number of complaints from customers on that score. The other 85% after a summer's experience found the whole problem of little consequence. Asked if they fell in line with the majors and now guarantee consumer prices against drop to October 1, approximately five-sixths of the companies say they do and one-sixth that they do not.

DEALER BULK STORAGE: Approximately 38% of the fueloil distributors say that on August 1 their own bulk tanks were as near empty as possible. Another 32% say that on that date they were unusually well filled, and the remaining 30% say that the condition was average with no particular attempt to be either empty or well filled.

Asked about their present thinking on what they should do over the following sixty days, 41% said that they would keep their bulk tanks as full as possible during August and September while the other 59% had no intention to fill up. These figures are to be looked at in the light of another statement by the same group in which 90% say that their costs are guaranteed against loss to them during the period. It is increasingly apparent with the passing summer months that the guaranteed price program has not been very effective to get tanks filled.

OILBURNER SELLING: As the industry approaches its peak months for sales volume, considerable merchandising activity is apparent in all sections of the country. Among the dealers reporting, 69% or a little over two-thirds say that they are now actively driving for business while the remaining 31% of the dealers are content to coast through the season. It is evident that an expanding degree of actual marketing is in progress after so many years in which the industry did not have to sell.

Asked for details on just what they are doing to promote sales at this peak of the season, 54% of the dealers say that their men are doing some canvassing, 70% are advertising, 36% have direct mail campaigns and 18% say that in their markets they have cooperative or group promotional activities underway.

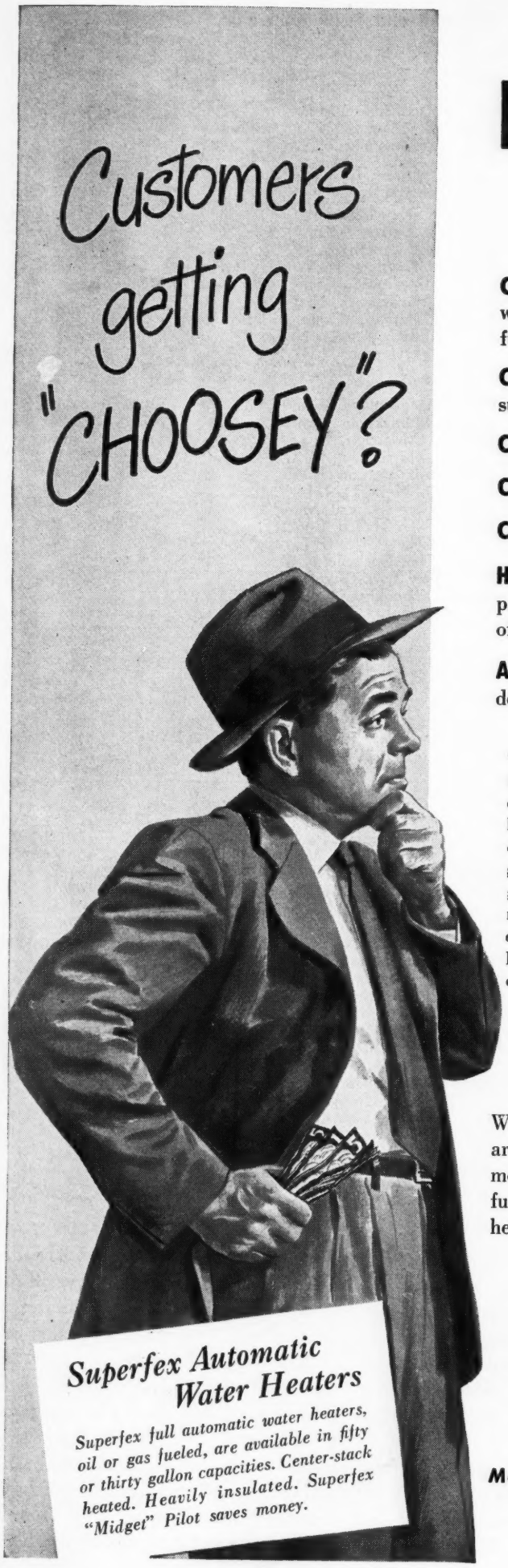
COMMENTS: Typical comments from dealers on questions of the month are . . . "Cannot think of anything bad enough to say about the summer discount plan" . . . "We are not advertising at this time because we have all the work we can handle for the next two months" . . . "Too many ice dealers are underselling and misrepresenting (apparently fueloil)" . . . "Business is on the up-grade but there are plenty of price buyers" . . . "Most of our new business comes through old customers and with very little promotion our business has grown each year" . . . "Quite a

(Continued on page 157)

Oilburner and Building Permits

OILBURNERS					DWELLINGS			
July		7 MONTHS			July		7 MONTHS	
1949	1948	1949	1948		1949	1948	1949	1948
53	17	..	..	Albany, N. Y.	..	..	..	..
429	223	2791	964	Baltimore, Md.	159	351	1282	2779
..	..	..	..	Binghamton, N. Y.	10	30	63	78
..	..	..	..	Bloomfield, N. J.	8	13	38	53
..	355	..	..	Boston, Mass.	30	37	208	208
66	72	388	402	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	52	27	209	189
..	..	..	..	Des Moines, Ia.	147	99	665	574
..	719	..	..	Detroit, Mich.	1169	727	6259	4873
38	22	257	269	Elizabeth, N. J.	4	8	23	17
33	23	148	114	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	..	48	107	167
..	..	..	..	Hackensack, N. J.	4	1	30	31
12	48	525	516	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
17	23	144	84	Irvington, N. J.	..	4	15	36
..	..	..	..	Lynn, Mass.	29	18	107	97
6	17	..	..	Meriden, Conn.	..	..	..	..
303	167	1698	925	Milwaukee, Wisc.	216	130	..	1100
67	93	415	571	Minneapolis, Minn.	131	152	820	802
22	18	115	132	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	..	1	..	8
28	24	197	113	Mt. Vernon, N. Y.	..	..	..	..
..	..	..	..	Newark, N. J.	..	..	..	..
83	28	544	376	New Bedford, Mass.	..	..	..	..
42	47	244	200	New Haven, Conn.	..	..	..	..
..	0	..	0	New Orleans, La.	..	..	..	..
24	9	135	75	New Rochelle, N. Y.	1	9	31	53
..	4029	..	33,209	New York City (total)	..	..	..	..
..	3717	..	30,908	Brooklyn-Queens	..	..	..	..
508	312	2888	2301	Manhattan Bronx, Rchd	..	..	..	..
108	171	732	836	Norfolk, Va.	34	51	414	356
..	3	..	8	Oakland, Calif.	..	..	..	..
59	51	..	607	Omaha, Neb.	49	59	..	468
24	17	88	77	Orange, N. J.	..	1	..	8
28	25	163	135	Passaic, N. J.	..	..	..	..
67	56	367	236	Paterson, N. J.	10	11	60	61
989	538	4084	2589	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	27	11	63	55
41	40	168	169	Portland, Me.	16	11	79	95
636	587	3578	3360	Portland, Ore.	191	144	1187	1102
14	19	84	80	Poughkeepsie, N. Y.	..	..	..	..
..	59	..	313	Providence, R. I.	..	17	..	114
..	..	..	..	Reading, Pa.	7	3	28	21
95	84	460	445	Richmond, Va.	75	56	466	650
174	150	1118	904	Rochester, N. Y.	..	..	..	..
20	16	123	131	Rockville Center, N. Y.	11	22	64	136
20	12	141	98	Salem, Mass.	7	14	61	45
18	125	540	769	St. Louis, Mo.	43	50	277	281
163	101	877	610	St. Paul, Minn.	46	90	371	564
40	59	300	477	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	144	175	923	..
..	..	..	..	Springfield, Mass.	37	57	274	345
45	19	248	241	Stamford, Conn.	..	..	..	..
54	..	..	..	Syracuse, N. Y.	37	..	209	..
..	..	..	..	Trenton, N. J.	4	3	57	18
..	..	..	..	Utica, N. Y.	13	17	45	85
141	116	566	682	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	19	14	77	92
20	19	102	112	White Plains, N. Y.	12	5	57	59
105	93	492	447	Wilmington, Dela.	7	9	..	88
121	..	740	..	Worcester, Mass.	..	..	..	..
70	41	263	165	Yonkers, N. Y.	..	..	..	..
4608	3482	24 983	19,605	*Totals*	2712	2404	13,437	13,922
+32.3		+27.4		*Percent Change*	+12.8		—3.5	

UNIVERSITY OF MICHIGAN LIBRARIES


Customers getting "CHOOSEY"?
Superfex Automatic Water Heaters
Superfex full automatic water heaters, oil or gas fueled, are available in fifty or thirty gallon capacities. Center-stack heated. Heavily insulated. Superfex "Midget" Pilot saves money.

Better Sell Superfex!

LOOK at what Superfex gives you

CHOICE of the exclusive "Homogen-Air" three-stage fire with synchronized blower*; two-stage system or gravity furnaces, either gas or oil fired.

CHOICE of basement furnaces, floor furnaces, high-boys or suspended units.

CHOICE of vaporizing or gun-type oil burners.

CHOICE of complete furnaces or conversion burners.

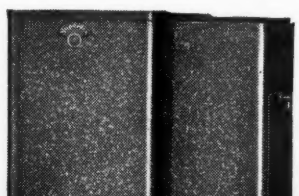
CHOICE of natural, manufactured or L.P. gas burners.

HIGHEST QUALITY CONSTRUCTION; stainless steel oil burner parts; high efficiency heat exchangers; Double-wall casings of heavy gauge steel; Sealed-to-steel baked enamel finish.

AND heating engineering service backed by the finest development laboratory in the industry.

*The Superfex "Homogen-Air" is the *only* system that *continuously* delivers the right amount of heat from a three-stage fire, and *continuously* circulates it. "Homogenized" effect of constant mixing gives even heating with never more than 4° difference, floor to ceiling. The most critical buyer likes the added VALUE in this extra comfort at less cost.

Every Season Is Your Busy Season With Superfex



MODEL 62 Gas, 100,000 BTU. Input

With this complete line, you can be GLAD that customers are getting tougher about the VALUE they get for their money. The PLUS features of Superfex, the things no other furnace has, provide Superfex dealers with the greatest heating values in ANY kind of a market.

Superfex

GAS OR OIL FURNACES

***Made by* PERFECTION STOVE COMPANY**

7094-E Platt Avenue • Cleveland 4, Ohio

Margins and Marketing

Some Problems in Distributing Fueloil in the Northwest

by
Robert G. Elmslie*

This article is a summary of developments in the marketing of fueloils in the Pacific Northwest with particular emphasis on fueloil dealer and distributor relations with their competitor-suppliers. Mr. Elmslie also reports on a recent case study of costs-of-operation, showing the dealers' present vulnerable position in a weakening price market. The study includes firms handling stove oil (PS 100), diesel or furnace oil (PS 200), and light and heavy residual oils (PS 300 and 400), during the calendar year of 1948.

OIL FUEL ECONOMY and expansion in the Pacific Northwest, unlike Eastern markets, has been dependent on only one supply source; the narrow producing confines of central and southern California. Some half dozen or so major oil companies produce, refine and market their products without fear of external domestic competition upsetting their general plan of distribution. Oil heat development on the Pacific Coast has been retarded by competitive fuels and price influences.

With considerably colder winters and reasonable proximity to the low cost coal producing areas of Canada, Montana, Wyoming and Utah, the inland market of Eastern Washington, Eastern Oregon and Idaho developed from a wood consuming area in rural sections to coal consuming urban centers. Oil was transported by tanker to the Lower Columbia River, up the river in barges and trans-shipped in tank cars or truck transports to major metropolitan centers. Freight transportation costs to these inland areas placed oil at a disadvantage pricewise to wood and coal.

While major terminals, Seattle, Tacoma, Bellingham, Everett and Portland are supplied directly by tankers from California points, two extremely competitive fuels dictated general price levels during the '20's and '30's. *First*—mill-waste wood products, slabwood and sawdust, marginally produced forest wood by farmers, etc. Pre-war price levels on slabwood along the entire coast area probably averaged $5.00 per cord delivered to the consumer. Some areas were as low as $3.00 per cord at the beginning of World War II. Sawdust was equally low, averaging $4.00 per unit (200 cu. ft.), delivered to the consumer. The average householder would burn from eight to twelve cords or units a year for space heating. *Second*. Proximity of Washington coal to principal metropolitan markets—pre-war prices for coals, Seattle, Tacoma, and Bellingham—$7.50 to $9.00 per ton for stoker coals—$8.00 to $12 for prepared coals.

Oil Prices Pre-War

As a result, during the '30's, major oil companies' posted selling prices on middle-range oils were unnaturally depressed by competitive fuels, and gradual oil heat expansion was only through intensive selling effort by the dealers. At the beginning of World War II, the prevailing price close to tanker terminals in the Pacific Northwest for furnace oils was approximately 6¼-6½¢ per gallon, with stove oils selling for about a cent more. At the same time, light (PS 300) fuel oil sold for between $1.05 and $1.35 a barrel. Heavy fuel oil, PS 400, the same as eastern No. 6, was generally 20¢ per barrel lower in selling price. In the Inland Empire, price levels were somewhat higher due to reshipment transportation costs.

Robert G. Elmslie

Fuel Prices—War Years

During the war years, with prices frozen, major oil companies were unable to increase realizations for the middle range fuels. Standardization of lower octane ratings of gasolines gave refiners a material increase for the light end products. To match that more lucrative return and to prevent serious diversion of distillate stocks into gasolines, OPA granted a ¾¢ per gallon increase on furnace and stove oil during the last year of price control—a very healthy increase. During this period, some of the major suppliers on the Coast made studies of competitive fuel costs and prices throughout the entire Northwest. These studies influenced their thinking as to possible future returns. The studies were based on the then existing relationships between oil as a fuel and other fuel supplies. This was both unfortunate and, we feel, unwise, since comparisons among fuels did not reflect normal competitive conditions.

The rapid expansion of shipbuilding and airplane manufacturing on the Coast, caused a resultant tremendous influx of population. The heating fuel requirements of these people could not be met by oil, they had to be supplied by either coal, wood, or sawdust. These fuels were, therefore, increased in price beyond normal levels to encourage mar-

*Manager, Oil Fuel Dealers' Credit Association, Seattle 1, Washington.

UNIVERSITY OF MICHIGAN LIBRARIES

ginal production and distribution from remote sources. For example, sawdust, selling at $4.00 per unit, slabwood at $5.00 per cord, and prepared coals at $10.00 to $12.00 per ton, during the war were increased, in some cases, over 100%. These fuels then, were the price yardstick upon which major supplying companies based thinking on future levels of oil pricing.

Post-War Prices

The householder was caught at the war's end in an artificially high and frequently short fuel market. He was anxious to convert to oil heat—to get away from both the annoyance and the suddenly high cost, hand fired heating plant. His conversion to oil heat with lower annual costs was short lived—with the end of wartime price controls, dealers and consumers in the Northwest experienced a rapidly accelerating pace of price increases on all types of heating oils. Major suppliers were beginning to use the studies they had made of comparative fuel prices. At the present time, fuel oil price levels throughout the Northwest are more than 100% higher than during the war years. This rapid increase created pressing problems of consumer relations—the more so because they came so fast after the war and from an admittedly low level. Very poor judgment was exercised by the major companies in such precipitous price increases. At the same time that the dealers were experiencing these price increases, they were being squeezed margin-wise by increased labor and equipment costs.

It must be remembered that during the entire pre-war and post-war period the distributors did not have a free election to determine prices at the retail level. Major oil companies, their suppliers, posted prices in each community for various products supplied that community. They religiously guarded against any dealer increase in margins by continuing the set practice of granting only nominal discounts from their posted retail prices. While the distributor was the primary factor in expanding the market and creating demand for oil heat and oil products, the major continued his competitive role of supplying part of the market through company owned facilities. In many communities, the major supplier was in direct retail competition with his dealers.

With most oil products originating in California under the control of five or six major refiners, there is no incentive for the independent dealer to buy or own storage facilities. Unlike eastern marketing centers, he cannot take advantage of "free" or spot oils on the market—there are none.

As the dealers' business grew and absorbed a greater percentage of the volume in the market, the majors business declined. The independent dealer now handles 80% or more of the entire heating oil market, with the major supplier handling 20% or less.

The frantic rush of the majors to increase oil prices to a "parity" with other fuels in the post-war years disregarded certain basic reasons for those temporarily higher fuels. They disregarded also definite cost increases of the dealers —that is operating cost increases—labor — facilities — equipment. The dealer position percentage-wise would not have deteriorated so badly if the major suppliers had granted normal increased margins as they advanced, step-by-step their retail posted price levels. It is true that dealers received somewhat larger margins dollar-and-cent-wise than they had received prior to the war, but these were not in proportion to the increased costs of operation.

As a matter of fact, the dealers lost ground very rapidly percentage-wise on margin return. Pre-war, the dealers had from 2¼¢ to 2½¢ margin on furnace oils, with a cost roughly of 4¢, and a selling price of 6¼¢ to 6½¢. This resulted in a selling price percentage return of from 36% to 39%. A slightly higher margin was enjoyed on stove oils, and the average return per barrel of industrial fuels was approximately 40¢. It takes little imagination to evaluate the relative dealer position, then and now, in terms of investment and capital required to cover operating costs. Today furnace oils cost 9¢ plus, and posted prices in this community are .112 per gallon (500 gallons up), the dealers' margin is less than 20%. Stove oils costing 10¢ plus, with posted prices of .127, the dealer has roughly 21%. Obviously, the dealer could not continue to operate on this price structure. In the last year and a half the dealer was forced into selling at premium prices over the major's posted price in the community. During periods of semi-shortage of product, it was comparatively easy for the dealer to maintain his volume of business and to sell at premium prices. When oil supplies become free, the problem is magnified disproportionately to the part each plays in supplying the market. The lowest price, particularly when it is the major oil company's posting becomes the going price in the community. It, in effect, dictates the price levels at which the dealer can sell his product.

Cost-Of-Operation Study

In the study we are examining, dealers in the Seattle market area had reached a rather general premium posting of .006 cents on furnace oils and .008 cents on stove oils. These premiums were only on the smaller deliveries; *i.e.*, seven barrel tanks and smaller in diesel oil, and two and three drum deliveries in stove oil. On the 500 gallon and up bracket the dealers were forced to maintain the majors posted prices. However, the smaller sized deliveries probably accounted for 80% of the dealers' total deliveries. This is an extremely unhealthy position. As economic conditions tighten, the dealer has greater difficulty in getting such a premium without serious loss of customers and volume.

Some 12 dealers are represented in this study, ranging from the smallest sized dealer in the market, handling roughly one million gallons of fuel a year to one of the largest distributors in the market. The total gallonage of the twelve dealers for the year was approximately 48,500,000 gallons, including 12,500,000 gallons of stove oil, 26,750,000 gallons of furnace oil, and the balance of other grades. The significance of this study is that these representative better dealer operations were treading on thin ice profit-wise, in spite of the premium they were getting during the calendar year of 1948. The average operating profit of these dealers before taxes or interest was barely 5%, or slightly over ½¢ per gallon. If we consider their returns after taxes, this return would drop to 3½%, or less than 40¢ per hundred gallons.

When we consider that the dealer

(*Continued on page 158*)

Buying the Right Oil Truck

There Are Several Considerations Besides Cost and Glamour

by
George Clement*

PROBABLY NO TWO DEALERS' delivery equipment requirements are exactly the same, even in a single locality. In an article of this kind, reaching dealers all over the country, it is impossible to even suggest what type, size or make of equipment is most desirable. We will attempt, however, to cover some of the points to be considered and offer some suggestions which we have found helpful over some 20 years of operating fuel oil delivery equipment.

One of the first and most controversial issues is "What size fuel oil trucks are most economical to operate?" In considering the matter of size, it is well to remember that a fuel oil truck serves two major functions. First, it is used as a means of hauling the product from the loading point to the place of delivery. Secondly, at each delivery point it serves as a device for pumping, metering and controlling the flow of oil into the customer's storage tank. This second function can be performed just as well by the smaller as by the larger truck. While it costs more money per mile to operate a large truck than a small one, in many cases, enough miles can be saved by using larger trucks to more than offset the higher cost per mile. The objective should be to determine the size truck that will provide the lowest cost per gallon for deliveries.

It is not too difficult to make a study of this problem. One method is to obtain a map of the city or locality to be served (an automobile road map may serve the purpose). Locate and mark oil terminals and loading points. Indicate on the map the centers of the neighborhoods or areas where your customers are located. If your delivery area is in a large city, one method we have found to be accurate is to select every 10th or 20th fuel oil customer from an alphabetical list and locate such stops on the map.

When the map is so marked, it should first be examined critically as to the location of the oil loading point or points in relation to the delivery areas. It may be possible to arrange to load oil in your trucks at a point nearer your delivery areas, or to load oil at two or more points instead of one. Considerable savings in delivery expenses can often be made in this way.

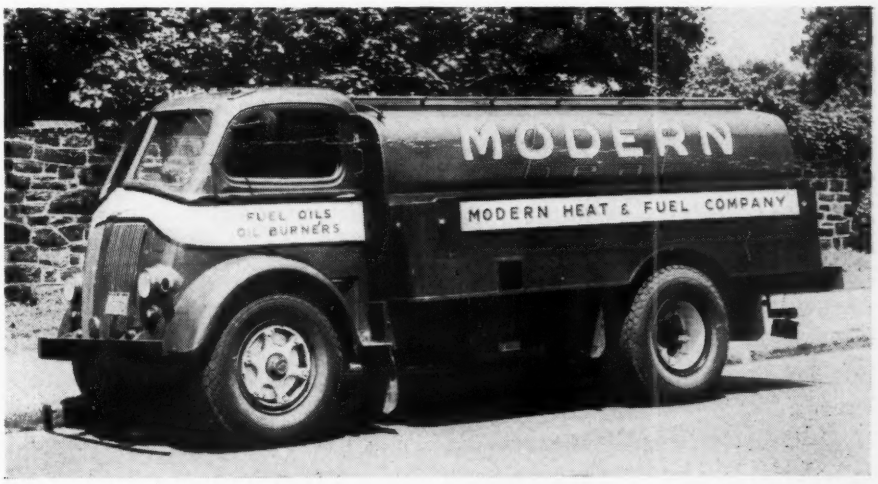
Having settled on the loading points, trace and measure a few typical trips for various size trucks (1,000, 1,500, 2,000, 2,500, 3,000 and possibly 4,000 gallons capacity) starting at the loading point, then to a group of customers in a certain area until the truck is empty, then back to the loading point, etc.

The larger trucks usually show up as delivering more gallons of oil per mile travelled, but we must next consider the cost per mile of operating each size truck. It is best to obtain this information in your own area. If you do not have operating cost figures of your own, for comparative purposes, the following figures represent averages of several Philadelphia operators and may be of some help:

1,000 gallon trucks—18¢ per mile
1,500 gallon trucks—23¢ per mile
2,000 gallon trucks—27¢ per mile

After you have determined which size truck shows the lowest cost per gallon of oil delivered, consideration should be given to some of the following factors as they apply in your locality before deciding what size trucks fit your particular operations.

1. Larger trucks require a greater capital investment.
2. Larger trucks usually last longer.
3. Larger trucks require more skillful drivers.
4. In suburban and rural areas customers often dislike very large trucks using their driveways.
5. Check the maximum weight limits and other truck laws in your state. In some states the weight law will not permit operating a conventional two axle truck of more than 2,000 gallon tank capacity. Greater tank capacity may be permitted on three axles, but consider the problems of traction on ice, snow and mud. Also consider the availability of parts and service on third axle equipment in your area.
6. In the 4,000 gallon class it will usually be found necessary to go to tractor trailer operations. This type of vehicle involves some problems in pumping equipment (described later) and requires more skillful operators. You will have to bear in mind that such vehicles may not be able to deliver to all cus-



A typical *2,000 gal., cab-over-engine light oil delivery truck, showing the skeleton skirting used by Modern Heat & Fuel Company.*

*General Manager, Modern Heat and Fuel Co., Philadelphia.

UNIVERSITY OF MICHIGAN LIBRARIES

tomers in an area because of long or winding driveways and may prove to be impractical in mid-city areas where traffic is congested, streets are narrow or where parking is a problem.

Consideration of the above factors as they apply in your area should be of some help in determining what size trucks to operate. Before leaving the subject, however, we would like to suggest that even though large trucks may seem more attractive in your operation from an economical standpoint, it is well to have at least one small truck for emergency deliveries during off peak periods such as nights, Sundays and holidays.

What Make and Type of Truck Should We Buy?

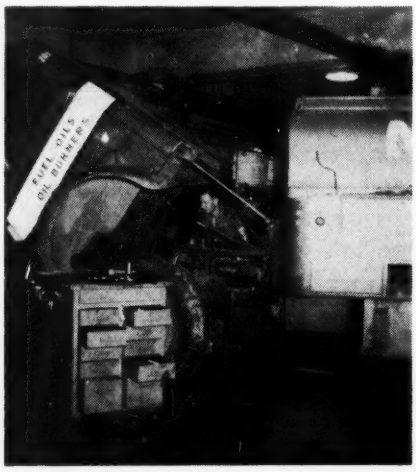
This is a favorite topic of discussion whenever truck operators get together. In our opinion, the highly competitive situation that exists in the truck market more or less guarantees that you get your money's worth no matter what make of truck you decide to buy.

We believe there are two important things to consider in deciding what trucks to buy: 1. Select a make that is well represented in your locality either

This 1,020 gal. *cab-over-engine model requires no more parking space than an ordinary passenger car and is used for mid-city deliveries.*

by a well established dealer or by a factory branch which has a record of operating over a number of years without frequent changes in management and operating personnel. 2. It is advisable for many reasons, but particularly if you do your own maintenance and repairs, to continue to buy the same make of truck year after year. We have found it impractical to follow this practice without deviation but out of some thirty oil trucks, twenty-four are of one make. We do most of our own maintenance at night and with a relatively small stock of parts such as axles, springs, etc., we can complete most repair jobs in time for the truck to go to work first thing in the morning.

Another rule we have found it wise to follow, and this again applies primarily if you do your own maintenance work, is not to buy a large number of new trucks at one time. The older a truck becomes the more repairs are required. Planned replacement of a certain



Another *cab-over-engine model whose cab tilts forward to facilitate service and maintenance.*

percentage of your fleet each year will keep the work load of your maintenance force at a more or less constant level.

Now let's consider the type of vehicle. We deliver fueloil in rural and suburban areas with conventional two axle trucks of about 2,000 gallon capacity. This is about the maximum weight for two axle trucks in Pennsylvania. We also deliver oil in the city and in the very congested downtown section of Philadelphia. We have found the cab-over-engine or C.O.E. type of truck superior for this type of work. C.O.E. trucks are shorter in wheel base and in overall length and can be parked more easily. They have a much shorter turning radius and can be maneuvered more easily in heavy traffic and narrow mid-city streets.

They have another advantage, often overlooked—because the driver sits higher in a C.O.E., he has better visibility and can often see over the tops of several cars ahead—thus he can anticipate quick stops. Many of our C.O.E. trucks carry 2,000 gallon tanks, but we use a 1,020 gallon C.O.E. with a 105" wheelbase in the heavily congested section of mid-city and in spite of all the traffic jams the driver of this unit averages four loads a day.

Why not use C.O.E. trucks exclusively? They have disadvantages too. They cost somewhat more than conventional trucks and because of their shorter wheelbase do not hold the road as well at higher speeds in rural areas, particularly when the roads are slippery. On most C.O.E. trucks the motors are less accessible for maintenance. One manufacturer has, however, licked this problem by building a C.O.E. so the cab can be tilted completely out of the way hydraulically, thus providing even better accessibility than can be found in conventional trucks.

The use of a third axle will in most states permit the use of 2,500 or 3,000 gallon tanks. In some areas these units are used quite extensively and may be economical to operate, particularly for larger dealers with high volume. We have not had any experience with these units and are reluctant to try them because of their relatively high initial cost.

Some operators are using tractor trailer units of around 4,000 gallons for delivering light oil to household accounts with apparent success. We tried one for one season a few years ago, used it on several different routes and found that on each route there were numerous stops that could not be made with such a unit. Another smaller truck, consequently, had to be sent out to cover them. That used up all the miles we saved and we discontinued the practice.

We do, however, use a number of tractor trailer units for delivering heavy oil to commercial and industrial consumers. One point in favor of this type of equipment is its flexibility. In the event of motor, clutch or transmission trouble it is frequently possible to obtain another tractor on a temporary basis until repairs can be made, thus keeping the unit in service. There is also the possibility of finding an operator or hauling contractor who has surplus tractors during the heating season. The tractors can then be leased for the season and only the trailers owned outright.

Before purchasing a tank truck chas-

(*Continued on page 153*)

Finding the Prospect

Canvassing Is the Surest Way to Make Enough New Friends

by
Ray Horan

ONE OF THE FIRST PROBLEMS facing the new salesman as he leaves the sheltered life of the dealer's classroom will be to establish a system for finding prospects. Considering the amount of his time, and the dealer's money, invested in the man up to this point in his career, there must be a *system* for finding prospects. It cannot be left to chance. No man has relatives enough to make him a successful salesman. He must be taught to make new friends and acquaintances on a schedule that will keep him busy, and provide a continuing source of people to talk to. Without such a stream of prospects all his training is worthless.

Essentially prospecting is only the process of making friends systematically. Some men make friends easily; some find it hard to strike up a conversation with strangers, and others find it nearly impossible. Those in the latter classification never should attempt to make a living in sales work. Those who like people and can talk to them easily—or with little difficulty—can be trained to sell.

The importance of this point too often is overlooked by experienced men. Few people buy oilheating equipment from strangers. That is mainly why so few oilburner and unit sales are made on the first call. The unit of sale is relatively high, and people do not buy from $300 to $1500 worth of merchandise from salesmen they do not feel they know. As a rule they do not change their way of life on the word of a stranger, or allow casual visitors to make major alterations in their dream houses. The introduction to oilheating is an important step in most families' lives. They must have confidence in the man to whom they entrust this step.

So, in this essay on "prospecting" let's keep in mind that the term is a misnomer. Finding a prospect, and eventually a customer, is the end result, but the immediate aim is to make a new acquaintance, start to build confidence.

Prospecting frequently is used as a synonym for canvassing. Canvassing properly means door-to-door selling activity. As applied to our selling activity canvassing also is a misnomer. We are not "selling door-to-door" but calling door-to-door, store-to-store, and factory-to-factory to make new friends with whom we expect to live for a long time.

"Finding a prospect, *and eventually a customer, is the end result, but the immediate aim is to make a new acquaintance, start to build confidence.*

Instead of ringing doorbells we might simply stand on a drugstore corner and try to start a conversation with everyone who stopped to look in the window. Of course we would find many who would not talk, others who were visitors in town, the usual number of people living in apartments, and a percentage of characters who needed "a dime for a cup of coffee." By the end of the day the number of qualified people we had found in this way—people we wanted to know and to know us better—would be disappointingly small.

We might stand in the cigar store and start conversations with strangers, but apart from annoying the proprietor, we would be disappointed. The field is too thin, and we need to make the acquaintance of people who can buy. There have been numerous tricks invented to avoid doing the obvious and necessary thing, but all of them fall far short of the need. The only sure way to make friends with people who can buy is to call on them at their homes.

There is no real oilburner salesman in the country who does not fall back on cold canvass as the last resort, but too many do not practice it regularly. The new man should be trained properly. He should make a habit of calling on a few homes each day or every other day—depending on his needs—to keep his list of acquaintances growing at a constant rate. There is no substitute.

Occasionally a man will be found who likes to canvass and will spend too much time finding prospects and too little selling them. It is almost as bad to have too many prospects as too few. Any salesman with too many prospects invariably reduces the work applied to each one, and eventually comes to the point where he is doing no intensive selling at all.

What is needed is a system for a man that will produce two or three new possibilities each day. These possibilities can only be explored, sold or eliminated at the rate of two or three a day. Only by direct contact with suspects at their homes can a man be sure of creating possibilities as constantly as his sales work will eliminate them. There are other points in favor of canvassing.

This direct contact method of prospecting tends to concentrate a man's effort in one area. His chief asset is his time, and it should be spent as much as possible in the presence of people who can buy, not in traveling. Some salesmen have made it a practice to concentrate selling effort on friends and relatives of people previously contacted.

UNIVERSITY OF MICHIGAN LIBRARIES

They soon find their prospects are scattered over too wide an area, and half their time is spent in travel.

Canvassing uncovers a larger percentage of people who are not presently talking to competitors. Prospects developed by cold canvass usually are not shopping. They are usually sold without calling in the competition, but without direct contact with the people in a sales territory, competition will be selling them before they are found by our new man.

Salesmen are able to select those prospects from canvass calls that he can sell best. It is understood that no one salesman can sell every type of prospect. Personalities sometimes clash and whether it is the prospect who does not like the salesman or vice versa makes little difference. Every salesman should do his very best with all the people he meets, but he can find those most easy for him to sell only by calling on them.

Canvassing—Positive, Reliable

The canvass method is positive and reliable. It develops prospects as needed and in the quantity desired. Further, it brings the salesman in contact with the wife who will influence the sale probably more than the husband. It locates old installations ready for replacement. It makes possible a reliable source of leads the year around, and last but not least, it develops salesmanship and versatility as nothing else can.

Every experienced man has his own ideas about the best time to canvass, but most agree that the morning between 9 and 12 as the most reliable. First, the salesman is rested physically and he is more alert. Next, housewives usually are at home during these hours and the kids are at school, or demanding less attention than they may at other times of day. In warm weather canvassing can be done in the early evening when people may be found around the grounds or resting at home. Many people can be contacted at this time who are not available at home during the day. It is the best time for call-backs on those who could not be seen during the morning hours.

A type of canvass call that should not be neglected—and too often is—is on the store properties in town. Canvassing store property is different from calling on homeowners. In most cases the store is not owned by the tenant, though if the tenant has a long lease he may be a good prospect. Usually this type of sale also involves the landlord and some discussion of new leases. Store owners or tenants should be seen early in the morning. Most of them have trouble getting up heat in the morning after the fire has been banked all night, and the proprietor has more time for discussion before the customers start coming in.

In blocks of stores with apartments upstairs both the store and the living space frequently is served by one heating plant. Heat is kept up all night or until late at night and fired again in the morning. Usually the tenant upstairs has to handle the fire, and gets a reduction in rent for his services. But whether the tenant fires the furnace or it is done by an outside janitor, automatic heat can show a handsome return on the investment.

Commercial establishments offer a variety of prospects with needs ranging from supplying hot water for the barber shop to firing the boiler in the power plant. Garages, laundries, banks and office buildings all need heat and hot water. The field is limited only by the salesman's imagination.

Other Obvious Sources

There are other obvious sources of oilheating prospects the new salesman should be taught to use. The real estate office can supply leads if proper incentive is offered to make it worth while. Interior decorators know where alterations are being made, and though it would be better if the salesman had called on the family before the redecorating were settled, there still is a chance of including a new heating plant in the renovations.

Secretaries of clubs and fraternal organizations frequently know prospects they can turn over to the salesman, providing he makes it worth while. Refrigerator service men, insurance men, and even the milkman may have leads that can be turned into sales. All these sources should be used by the alert salesman. It must be his job to know as many as possible of the people who live or have businesses in his territory. He must be coached to look for opportunities to increase his acquaintanceship in his area.

The new salesman also must be taught to keep his record of calls in such a way that he can tell easily the status of his prospects. Usually the dealer has a system of his own that salesmen are required to follow. If not, the man should be taught to keep his own records. A small wooden file box separated into three sections can be used. A canvass call that develops a call-back generates a card in Section 1. When a presentation has been made but not closed the card moves into Section 2. Cards in Section 3 may mean a closing attempt has been made without getting the order, and the prospect deserves another call to close. Cards that graduate from the file marked "Sold" present no problem. The others should be kept in a "Future" file for follow-up at a later date. The card file should be kept current and not allowed to become stuffed with deadwood.

To sum up, there are many ways to develop prospects, but the new man will do well to consider all his calls as opportunities to make friends. The best and most reliable method of contacting people to make their acquaintance is by making canvass calls. This method, used just enough to develop the two or three new prospects needed each day, provides a steady source of potential customers the year around. Prospects developed by advertising, by drop-ins at the showroom, and by chance acquaintances, should not be neglected, but neither should they be depended upon to supply a salesman's total prospecting needs.

◈

W. F. Brannan, president, Anchor Post Products, Inc., Baltimore, Md. and *L. P. Hanson,* general sales manager, U. S. Air Conditioning Corp., Minneapolis, Minn., both are included on a fifteen-man board acting as an advisory group for the first Plant Maintenance Show, to be held January 16 to 19 in Cleveland. A four-day conference on plant maintenance methods will be held concurrently with the show, for which more than fifty companies already have reserved space.

A. F. Westerfield has been elected vice president, United States Radiator Corp., Detroit 26, Mich. He has spent his entire business life in the distribution of heating products and during the past twenty-three years was manager of the corporation's Southern Branch.

Rating Service Men

When Men Know How They're Doing, Jobs Are More Interesting

by
Robert Gray

WHEN A MAN BELIEVES that his particular job doesn't make much impression in the large firm or industry that employs him, there's little reason to take any special pride in the skill he might develop. This is particularly apparent in the service side of any business . . . that non-profit department that too many bosses look on as a necessary nuisance. A service man may not even have the satisfaction that comes to a man doing routine work in a factory, a cog-in-the-machine, because the cog at least knows that he's helping to make a product that someone is going to brag about and sell at a profit. By the trouble-shooting nature of his work, the service man often senses that both the boss and the customer wish they didn't need him around.

This is another Sherwood Brothers story, another of the revelations that come through a study, year by year, of that Baltimore firm's imagination and ingenuity. Through a system of analyzing the work done every month by each of 31 service men and taking steps both individually and collectively to cure the bad spots, the output per man hour has been raised 14% in the past 18 months, and the men are enthusiastic about the changes because their activities are getting a lot of attention from the top bosses. Now they're on the team.

The saving was not engineered for company profits, because John R. Sherwood, company president, does not believe in making money on service. He does want this department to break even while giving the customers the most possible for the money. It was not many years ago that Sherwood had an annual service contract at $10, including summer overhaul, emergency service and parts. By steps, this has now gone up to $17.50, which he feels is too high, since many thousands of customers live in small row houses and burn only 1,000 gallons a year of fuel. The object, then, of the higher efficiency program is to be able to cut the annual charges and still hold good incomes for the men.

The men belong to the International Assn. of Machinists, an independent union that the company rates as being on the level. Top service men get $1.75 an hour with time and a half over 40 hours, and they have two weeks vacation, two weeks sick leave and seven paid holidays . . . in other words, extra good jobs worth holding.

Along in the fall of 1947, Tom Carson, mastermind of the company's oil-heating and fueloil division, got the urge to try improving service department efficiency. The more he thought about it, the more he could see that before you start to improve something you should know what it is you want to improve. In other words he needed a yardstick of good service performance before he could start measuring.

Endorsed by Men

When the service men learned that their department and their individual activities were to become the subject of studies the reaction was surprising. Offhand you'd say they would object, because it would look like someone was about to make them work harder . . . but that viewpoint ignores the implications in the first paragraph of this story. The men, as a matter of fact, were enthusiastic . . . there were a lot of things they wanted cleared up for themselves.

With the help of some of the service men and union stewards Carson worked out a simple plan that would measure the monthly output of each man. There was no previous standard against which to gauge this but it could be matched against the average of the group as a whole. In that way each man could know whether he was doing better or worse than the gang.

It was not necessary to have a minutely accurate measuring system, so long as it was uniform and treated everyone alike. It was decided that all service calls would be divided into only three categories. First would be all emergency calls, second would be overhaul jobs (cleanup and tuneup) and third would be combined inspection-and-miscellaneous, which included all unidentified types.

For each service call the service man is credited with $3.50 in revenue even though some individual calls are longer or shorter than others. For each overhaul job he is credited with $7.50. For all inspection and miscellaneous jobs the credit is at the rate of $3.50 per hour for as many hours as are needed. For every repeat call there is a charge-back against the man's record of $3.50. To show how the rating system actually works, let's take an individual, call him Jackson, and follow him through the month of December 1948.

During the month Jackson made 183 emergency calls	@	$3.50	$640.50
14 overhaul jobs	@	7.50	105.00
35.25 hours inspection and miscellaneous ..	@	3.50	123.38
Total credits			$868.88
Deduct 40 repeat calls	@	3.50	140.00
Net credits			$728.88

Jackson had during the month 262 total hours. Dividing the net credit figure of $728.88 by 221½ hours we get $2.78 credit per productive hour and that is his rating for the month. It happens that the average rating for all of the 31 men was $2.74, so Jackson is in the upper half.

Each month a rating or report card is mailed to the man's home, so that he can study it at his leisure and also compare it with his results in other months. There is another important advantage to the man in having an official record of his own rating compared to the group. If he at any time goes after another job, his official rating cards showing him above average in the Sherwood organization would be pretty useful.

To be sure and work the bugs out of the program, Carson kept records for a full year, from November 1947 to November 1948, before he started sending out the rating cards to the men.

When a man is rated below the group average it doesn't mean much for one

UNIVERSITY OF MICHIGAN LIBRARIES

This is a sample of the monthly record mailed to each man's home

PERFORMANCE REPORT

Date: Jan. 15, 1949
Period: Dec., 1948

	Group Aver.	*Your Aver.*
Hours per Service Call	.96	.86
Hours per Overhaul	2.09	2.11
Hours Lost Time	22.38	40.50
Per Cent of Repeat Calls	16	20
PERFORMANCE POINTS	2.70	2.78

Remarks: Your very good record on the first item was almost overcome by less favorable comparisons on the other three. At the first opportunity let's check the lost time sheet. It's a good card.

T. E. CARSON

or two months unless he's near the bottom of the list. Even these men take to the idea with little resentment. They come in and talk things over with the supervisor . . . sometimes he goes out with them on some of their jobs to see how they do things. Sometimes he can point out short cuts that do good work in less time. Again it might be that a man had a tendency to stay around to "spit and polish" more than necessary after the real trouble had been fully corrected.

Study Helps Records

In checking to see how different men do specific jobs, some interesting facts came to light that have naturally led to standardization of some operations. Nozzles, the chief source of emergency calls, have been explored from stem to stern, a lot of new things learned and put into practice. The men were having a lot of trouble with a particular make of relay. Investigation convinced them that the product was defective—not well made. Submitting their evidence to the manufacturer, he was glad to change the construction of the control and to take off Sherwood's shelf the remaining stock.

Their pump experience was novel. They used to bring in pumps and swap them for rebuilt models. Carson felt that this cost too much, particularly to the consumer in higher annual service charges. Now all pumps are repaired on the job, with much lower costs. To learn to do this work each man took a night school course in pump maintenance.

Each month an analysis is made of the causes of service calls and a lot of searching is done to find ways to pull down the high ones. The table shows the list of reasons for the month of March this year. There were 3,105 calls out of a total of 17,000 customers in the city (Sherwood has another 5,000 in other parts of Maryland). About half of the calls were in six items—so these deserve attention.

All of Sherwood's service men work all over town. They start at different hours . . . 7 A.M., 8 A.M., 3:30 P.M. and midnight and all men rotate on these four shifts. Of the 31 men now in service, 19 have been with the company 10 years or more. At the peak there were 37 men . . . that was in the winter of 1947-48. Last season the 31 men handled a total of 1,500 more accounts than had been cared for by the previous 37 men. Not all of this improvement came because of the rating program for men. Some came through spreading annual clean-ups around the year so that there would be no slack season. Yet the rating plan has been responsible for an average improvement of around 14%.

Some company averages might be useful to compare with your company records, so these figures are based on a study of a single month, December 1948, and covers 31 men.

Average number of emergency calls handled	128
Average number of annual overhaul jobs per man	12
Average number of inspection and miscellaneous calls	5
Average hours per call	
Emergency service	0.96
Annual overhauls	2.09
Inspection and miscellaneous	3.16
Average hours worked	
Productive	164.6
Lost time	22.4
Total per man	187.0
Repeat calls, 16% of total (compares with 25% previous year)	
Average miles driven during month	928

The lost time hours during the month were divided:

Not home	24.8%
In shop	38.6
Waiting parts	18.0
Travel time	9.4
Waiting a call	1.1
Office	5.1
Visit doctor	0.5
Pick up parts	1.1
Build up	1.4

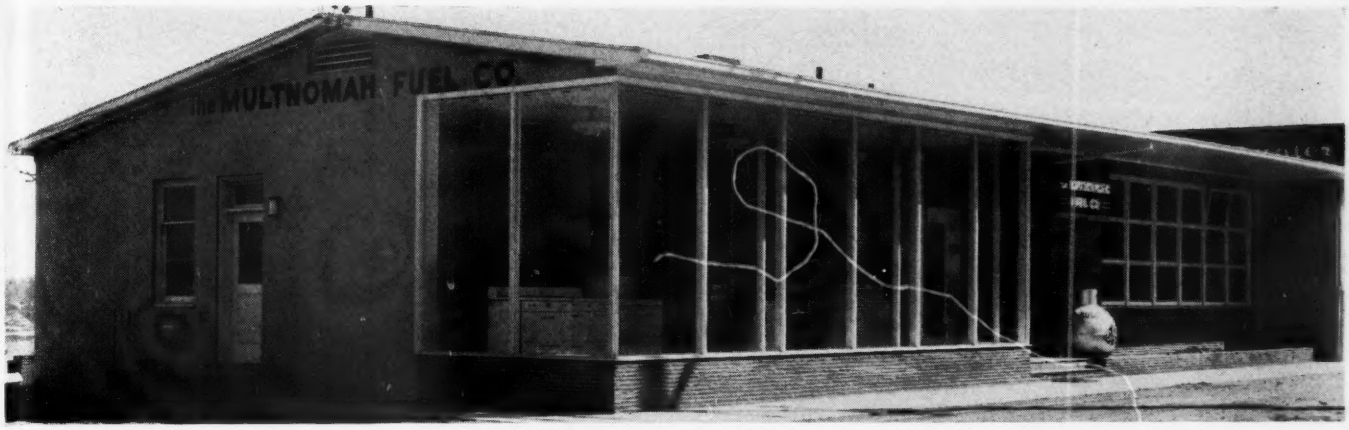
It was mentioned that average output or ratings for the group had risen 14%. This was based on five winter months from November to March, inclusive, of the past season compared with the one before. The average in the 1947-48 winter had been a rating of 2.22 and this past season it was 2.54.

A number of the methods worked out by Carson and Oliver Travers, assistant general manager of oilheating, could be found in other well run organizations—particularly the idea of analyzing service calls to spot and correct weaknesses in procedure, but the program of rating the men is unique. They watch their batting averages just like ball players, not so much to be able to do better than some other man as to keep their ratings in the upper half of the group. They are not paid any more for this superior performance . . . that is, paid in cash. But there is something even more important to some of them, the sense of personal satisfaction and security that comes from having definite proof of being above average . . . being good men.

Causes of Service Calls

March 1949

	No. of Calls
Nozzles	408
Relays	247
Ignition	230
Thermostat—plain	220
Strainer	215
Burner motor	163
Pumps	131
Oil leaks	124
Out of oil	113
Atomizer	101
Aquastat	86
Thermostat—clock	60
Circulator motor	59
Boiler clean	38
Emergency switch	36
Constant level valve	32
Oil placement	31
Water leak	30
Fan	30
Coupling shaft	25
Installation	23
Low water control	23
Hearth, combustion chamber	21
Water valve	20
Oil valve	19
Vibration noise	16
Draft-O-Stat	15
Comb. Fan & Limit	14
Tankless heater	13
Water tank	11
Water feeder	6
High fuel consumption	4
Oil tank	3
Airstat	3
Radiation	3
Pressurestat	2
Modernization	1
Miscellaneous	439
Total for month	3,015



Gas on Wheels

Some Dealers See LPG as Parallel to Oilheating

by
A. E. Coburn

IF YOU ARE thinking of getting into the liquefied petroleum gas business, as many dealers are these days, those who already are in it think there are some things you should know about its similarity and dissimilarity to the oilheating business. It is true that both LPG and fueloil are petroleum products; both are handled in bulk to consumers' tanks and both are burned in domestic, commercial and industrial burners and appliances. The sale of fuel and burners for both petroleum products offers a potential profit. About there the similarity stops.

The chief difference between burning oils and liquid gases is that distillates require a few hundred degrees of temperature to vaporize them completely. Liquid gases will vaporize completely and almost instantaneously at below room temperatures. It requires either a low temperature or a high pressure to keep them liquid. Since it is not practical to keep the product under refrigeration until used, it normally is stored in pressure containers. The liquid in the container evaporates until a pressure is reached at which no more vaporization will take place—50 to 125 lbs. per sq. in. for butane and up to 200 lbs. for propane. As a burner is turned on, and gas is used, the pressure in the container drops and more liquid evaporates. Gas flows to the burner under its own pressure without need of pumps, by-passes or return lines. Power requirements all are met by the gas pressure in the tank.

LP gases are of two types, butane and propane. Butane becomes a stable liquid at about 32° F., where water freezes. Propane will vaporize at any temperature higher than —42° below zero. For this reason butane tanks have to be buried in most parts of the country to protect them against freezing temperatures and thereby maintain pressure. Propane tanks can be installed above ground where temperatures do not reach 42 below. These limitations have made the LPG business largely a propane business in most areas.

Propane Economics

Liquid propane contains 92,000 Btu per gallon, and a gallon weighs 4.23 pounds. It is sold by the gallon in bulk and by the pound in metal "bottles." Fourteen cents per pound in small bottles makes the price 60¢ per gallon, against a price of 20¢ per gallon and below for large bulk drops. Though margins may range up to 10¢ per gallon, the difficulty in handling, and the higher cost of equipment do not allow the net that such a margin would mean in burning oils. It is important that nobody be confused on that point.

Methods of distribution also range over a wide area from the dealer who delivers in truckloads from his own bulk plant to the "peddler" who deals in bottles and returns empties to his supplier. Most oilheating men would not be interested in this latter type of distribution. It is the equivalent of delivering oil in drums to small users.

Chief markets for LP gas are in those territories not supplied by public utility gas lines. There are few areas where liquid gas can compete successfully with city gas for the more common domestic and commercial uses, such as cooking, refrigeration, water heating and light space heating loads. It competes directly with fueloils for the larger uses, though it has advantages of flexibility, simplicity of equipment and ease of operation and control that allow it to be sold over oil at a considerably higher price.

One of the most successful oilheating firms in the LP gas business is The Multnomah Fuel Company at Portland, Ore. C. A. Marsh, manager, has developed a sizable business with special emphasis on the tourist and resort establishments that spot Western Oregon. Though electric power is cheap in the area, LP gas has been sold extensively on the basis of its dependability, and freedom from service interruptions due to line failures. Such considerations are of prime interest to restaurants, auto courts and other roadside establishments with a transient clientele, as well as to domestic users who want to avoid lapses in the supply of fuel for cooking, water heating and small space heating.

LP gas is relatively expensive for space heating, but it is used widely by

Delivery trucks *for liquid gas and fueloil mingle in the yard at Multnomah. Both products are "liquid fuel" to the company.*

auto courts where a little heat is desirable in the evening and early morning throughout the summer season. Equipment is relatively inexpensive to install and requires little service. It is more flexible than a central steam or hot water plant, and can be operated individually by all types of people without danger or inconvenience.

There are a number of industrial uses for the gas in metal working and heat treating. There are few gasoline-burning plumbers' torches or lead pots in the area. The telephone company and electric utility use the gas for metal melting, and industry has found that propane and oxygen is a better metal cutting fuel than acetylene and oxygen, since it leaves an edge that can be filed instead of requiring grinding. Farmers use the gas for brooders and are experimenting with it for dehydration. All these uses have built an imposing gallonage for Multnomah, and the business still is growing.

"We deliver in trucks of 1,300 to 1,500 gallon capacity," J. C. Yeomans, Multnomah's secretary, explains, "though the average dealer probably would require 800 to 1,000 gallon equipment. Our larger capacity for the individual truck is due to the greater distances we cover, running to 130 miles in one direction. The average dealer probably covers a radius about 25 miles from his plant, with 35 to 50 miles as the maximum haul for the smaller equipment.

"The time consumed in making a delivery makes it necessary to make the largest possible drop," says Mr. Yeomans. "All connections must be able to take the 200 pound working pressure safely, and the delivery problem is considerably more complicated than in dropping burning oils."

Size of consumer storage runs from 75 gals. up to 1,000 gals. Most popular sizes in Multnomah's territory are 150, 250, 500 and 1,000 gals. Price per gallon depends on the size of the tank, and the amount it is possible to deliver in a single drop. There is no attempt at a degree day delivery system, since the consumption is not principally dependent on outside temperatures, but a check is made on the individual's average consumption in an attempt to anticipate the probable date of delivery.

Seasonal Demand

Though space heating does not appear to be a principal use for LP gas, there is enough used for heating to create a seasonal problem. Refinery storage for the gas is limited and it must move out roughly as it is produced. However, winter demand peaks up to such an extent it causes a serious problem in the industry. Some refiners have limited their distributors to a winter supply not more than 1½ times their summer requirements. This has forced distributors to insert a clause in their contracts releasing them from obligation to supply more in the months of October to March than the customer bought in the months of April to September. Until some change in this storage situation takes place, or some summer use can be found to level the peak demand, it is not likely that LP gas will be a serious competitor for the heating market.

Consumers generally buy their gas burning appliances, but it is not usual for them to own their storage tanks outright. Tanks of every size are "sold" to the customer for about the dealer's cost for labor and equipment, with the provision that the customer is to buy all his gas from the dealer. Failure to buy fuel from the dealer makes the customer liable for an additional charge roughly equal to sales expense, overhead and profit on the job, after which he owns the tank. If the customer fails to pay the additional charge when he changes suppliers, the usual contract specifies that he shall sell the tank back to the original dealer at a specified discount to cover depreciation. In a typical contract the depreciation allowance amounts to 50% in the first four years and 80% in ten years, plus an allowance of $15 for removing the tank. Some dealers lease tanks to their customers for a payment about equal to the labor and materials necessary to make the installation. The dealer has the right to repossess the tank at any time the customer breaks his fuel contract. Customer turnover in the LP gas business is much lower than in the fueloil business!

(*Continued on page 152*)

Vaporizing Pot Type Burners

Service to Solve Fuel Flow and Combustion Problems

by

Charles H. Burkhardt

SERVICE on vaporizing pot type burners breaks down into two basic divisions: (1) fuel and fuel flow problems, and (2) combustion problems. Although each is a specific type of service and requires a definite type of approach, variations in the fuel or fuel flow will also result in defective combustion conditions. In this instance, the service problem is of a primary and secondary type. The primary cause, (defective fuel flow or fuel), resulting in the secondary service problem of smoke, soot or no fire at all. In the majority of cases, fuel or fuel flow difficulties will almost always cause combustion troubles, but the reverse of this will not occur with any great frequency.

From this it can be seen that primary service on vaporizing burners is any service that concerns itself with the fuel and its correct unimpeded flow to the pot. Secondary service concerns itself with the combustion going on after the oil is delivered to the retort. Therefore, in the majority of cases, service in pot type burners is of a primary nature when concerned with the *oil* flow and of a secondary nature when concerned with the *air* flow.

Primary (fuel flow) service results from faulty installation, improper fuel, or mechanical difficulties in controlling the oil flow rate. The things affected are the oil flow control valve, the filter or strainer, the oil line, the oil tank, the pot itself, and the proper height and space relationship between burner, flow control valves and tank.

Secondary service affects the air delivery parts, such as the fan, fan motor, air shutter (if any), draft, draft controls, chimney, baffle parts of the pot, and also perforated walls of the pot itself.

Much primary service with vaporizing pot type burners can be avoided by observing the flow control valve manufacturer's specifications, as to the height of the tank above the valve and the method of piping from tank to valve. Figures No. 1 and No. 2 show the proper height between parts that should generally be observed. As the static pressure head on the flow control valve is governed by the height of the body of oil above that valve, it follows that some care should be taken to observe the directions that affect this height. If a tank is not high enough, the flow of oil will not be constant or in large enough quantity because the pressure exerted by the column of oil will not be enough to overcome the frictional resistance of the line, filter and flow control valve. As a result, the burner will constantly be going out. If the tank is set too high, the head pressure exerted will cause erratic operation of the valve; and if the needle valve is slightly worn at the seat or dirty, it may force enough oil into the valve to trip the safety float mechanism and

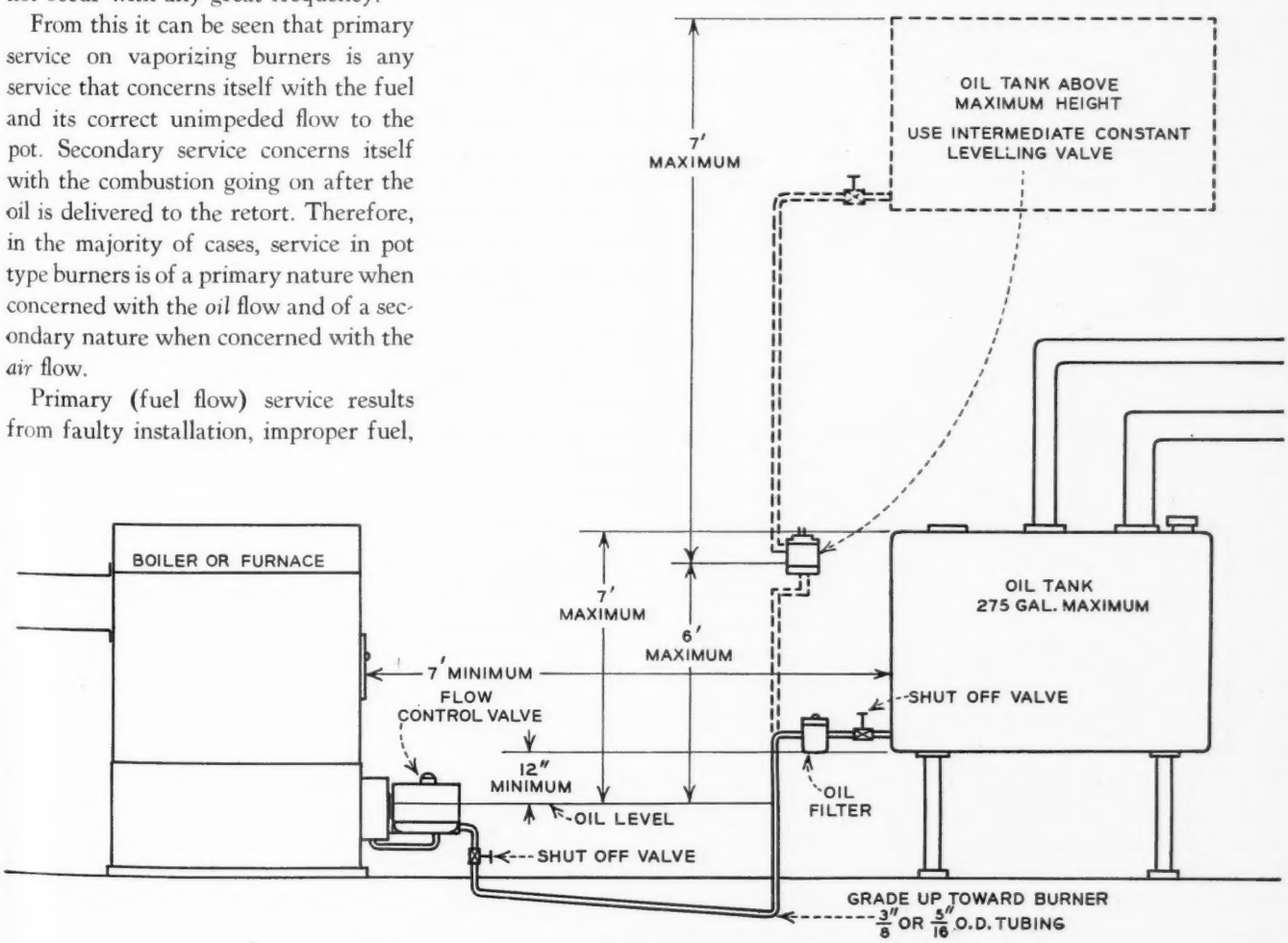


Fig. 1. *Approximate maximum and minimum tank and constant level valve heights above flow control valve.*

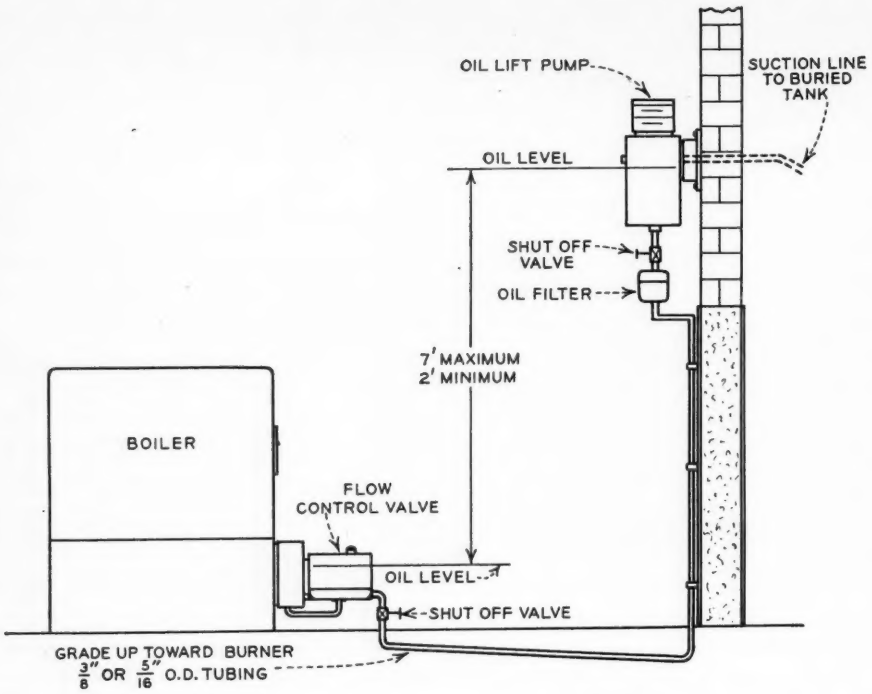


Fig. 2. *Approximate maximum and minimum height limitations when using wall lift pump.*

shut down the flow of oil completely.

In the event that the safety float lever has to be reset constantly, it may mean that the above condition, or a defective needle valve, or needle valve float assembly is the cause. If a tank is to be placed higher than is specified by the flow control valve manufacturer, then an intermediate constant level valve, as shown in Figure No. 1 should be used. The height of the intermediate constant level valve should correspond to the normal height dimensions for the tank if it were to be properly located. The tank will maintain the head pressure on the intermediate valve and it in turn will maintain the proper head pressure on the oil flow control valve. If a wall pump is used to lift the oil from a buried tank, the general dimensions given in Figure No. 2 should be observed.

Oil Flow Problems

In the event that no oil is flowing freely from the valve to the pot, the following points should be checked to find out the cause. The safety reset lever on the oil flow control valve should be in the "down" position. If it is in the "up" or "locked" position, no oil will be able to get past the needle valve. This float will only act when the oil rises above the safety level in the pot. In such a case, the safety float in the valve will rise too, as the valve level and the designed pot oil level are the same. Any higher level of oil than is normal in the pot means the safety float in the valve will rise and trip the lockout safety mechanism. This will shut off all oil flow to the pot. The pot should now be drained at the tee fitting usually provided. Such draining will leave a small amount of oil in the pot which can only be removed by tilting the pot or removing it. It is not necessary, however, to remove this small amount of oil that remains after removing the plug from the drain tee.

The fact that the retort is flooded means that the needle valve fails to close off the flow of oil completely, or that the main constant level float is sticking. Push the float gently down and see if it rises immediately to the top of the oil in the valve chamber. It should be buoyant enough to do so. If it does not, there may be a slight leak in the float which caused it to become oil logged. Remove the float, empty it of oil, and blow it clear of vapors. Then solder up the perforation with as little solder as possible, so as not to overweight and unbalance the float.

If the float is all right, check the needle valve to see if it seats properly and is clean. It will be necessary to disassemble the valve to clean it thoroughly. There are several manufacturers who make many models of such valves, and for this reason it is impossible to give a specific procedure for cleaning. Figure Nos. 3, 4 and 5 show models of these types of valves, but there are a multitude of variations in the construction of different models. It is wise in cleaning the valve seats and stems to use a good solvent, such as naphtha or carbon tetrachloride and avoid employing metal prongs to remove the sediment and sludge. Us a toothpick or sharpened wooden stick.

If there is no oil in the pot at all, check the tank to see if there is any fuel. If there is, remove the cover of the valve and see if it contains oil. If there is no oil in the valve, or the level is lower than it should be, then either the strainer is clogged; the static head pressure of the column of oil is not enough to assure free flow; there is a restriction in the line; or the needle valve is not lifting.

If, however, there is the proper level of oil in the valve, but the pot is dry, the stoppage then is in the line between the valve outlet and the burner pot. Remove the plug at the drain tee and see if there is oil up to that point. If not, clear the tubing between the valve and tee. If oil flows freely from the drain tee, then the line into the pot or the pot opening is clogged. Turn the reaming rod and push it back and forth. This should break up the stoppage. If the burner is not equipped with a cleanout rod, use a flexible strip of metal, stiff enough and of sufficient width to do a good reaming job. This should solve the oil flow problem.

Vapor Lock

Another source of fuel stoppage is air or vapor lock in the line. For this reason, the oil feed line should be tilted upward as it runs toward the burner. Air will rise to the highest point in the system, and tilting the line in this fashion will help the line purge itself. If it does not, open the line where it joins the flow control valve, and allow the oil to flow freely and steadily from it. It should *not* flow erratically or in spurts. Such conditions show lack of static pressure, or air and vapor in the line. If necessary, create a slight suction on the opened line by drawing on it. This will dislodge even the most stubborn air bubbles.

Vaporization of the oil in the line can

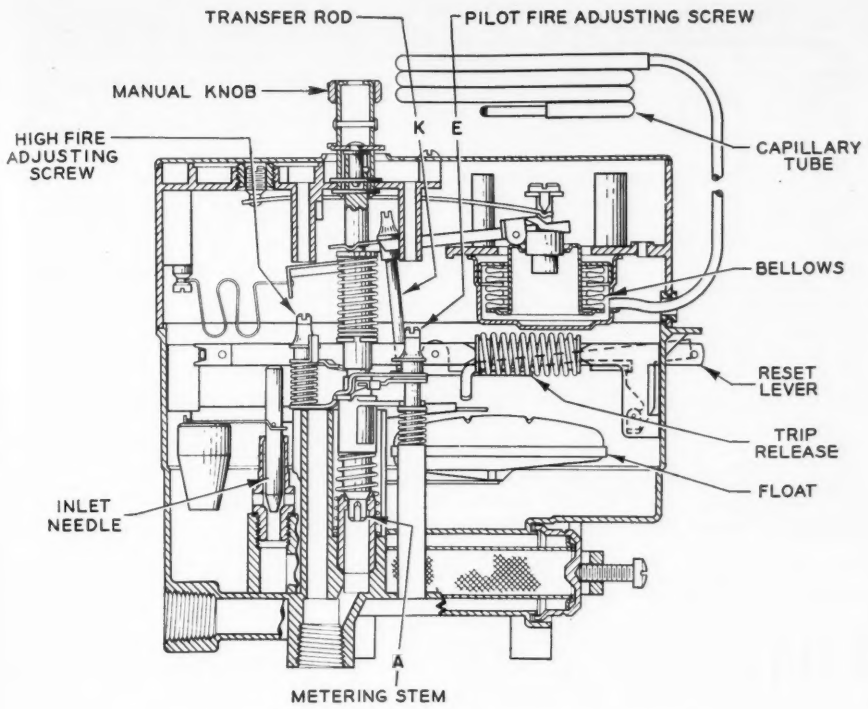


Fig. 3. *Detroit Lubricator CRC-239-WA float valve.*

cause the same type of lock in the line as does air. Remember that light fuel oils will begin to vaporize at 100° F. to 110° F. It is important, therefore, that oil lines do not run too close to the boiler or furnace, especially if they are running down to the burner from a wall mounted pump. Such oil lines pick up heat from the boiler and upon reaching about 100° F. will cause vaporization of the oil in the line. Such vapor lock can cut off the fuel supply completely. The best remedy here is to avoid the cause of the trouble—run the oil line in such a manner as to prevent it from being heated by the furnace.

As can be seen from the foregoing information, fuel flow service problems on pot type burners are simple to diagnose and still simpler to service. While flow control valves may appear complicated, by observing Figure Nos. 3, 4 and 5, it is obvious they all follow the same general principle of operation and differ only in mechanical details. Thus all service on such valves follows the same general pattern. These valves should be handled carefully. Do not bend or distort the levers attached to the float. They are precision instruments and such practices will not help but only destroy the effectiveness of the valve. The cleaning of valve seats and valve stems should be done with a pointed wooden implement, not metal, in order to avoid damaging the metal parts. Clean strainers with a toothbrush and hot water or a good solvent.

Combustion Problems

If the burner has been properly calibrated for fuel flow, (see July issue of FUELOIL AND OIL HEAT for the correct method of doing this), and it is smoking or sooting, then the service is of the secondary type, involving the air flow. Adjust for the correct draft, as explained in the previous article. If smoking still occurs with the proper draft and oil rate, then the trouble is in the amount of air being delivered or the grade of oil (too heavy). Check the fan and see if it is clean. If not, clean the blades with a brush. Observe whether or not the motor is coming up to speed. A slow motor will cause smoking by preventing the fan from delivering its rated quantity of air.

However, if these conditions are all right, it may be that the air is not getting into the pot. This can be a result of the holes in the perforated inner wall of the pot being clogged with soot or hard carbon. The pot will have to be removed and cleaned. Remove the baffle ring or rings and scrub the sides with a brush, using a good solvent such as carbon tetrachloride. Open the clogged holes with a *wooden* prong. *Do not* punch additional holes in the pot wall. If deposits of carbon on the walls are wet with oil, it does not mean that the oil level in the pot has risen that high. Carbon acts like a blotter, absorbing the oil and because of this it may appear as though the pot oil level rose higher than it actually did. After cleaning, reassemble the pot with the baffle ring and install it. Then level the unit at the *pot* and valve, not at the casing.

In the event the burner ignites, but will not stay lit, the following should be checked. Observe the pilot or low

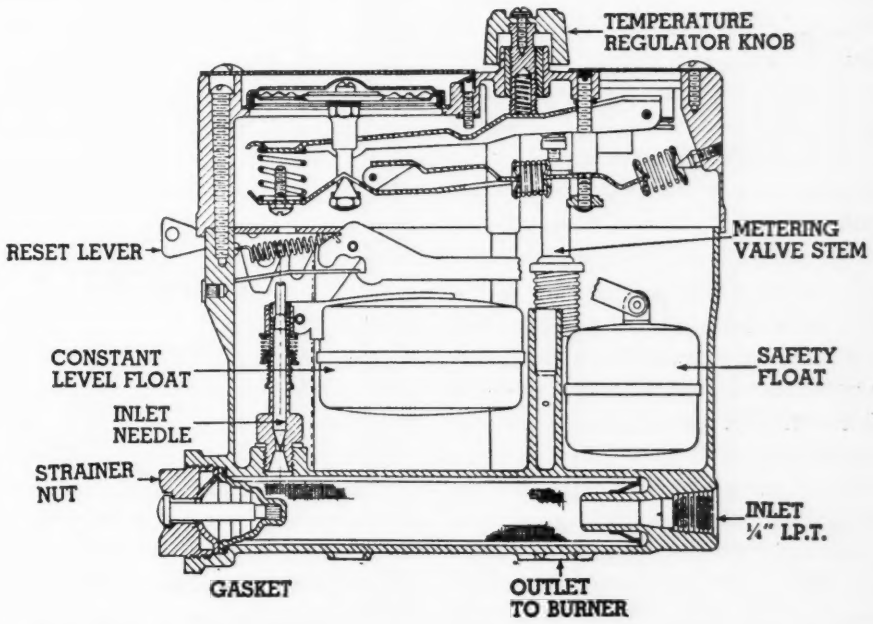


Fig. 4. *Automatic Products water heater oil control valve, model 240W-YP.*

flame; it may have been snuffed out by lack of draft or insufficient oil flow. If a pressure burner is used in the same flue, it may blow out the pot type water heater each time it comes on by creating a bad back draft condition. Insufficient air and draft will many times cause a vaporizing flame to smother and go out. Be certain the cellar is adequately ventilated. Lack of ventilation in a tightly sealed cellar means the fire is going to be starved for air. It will then smoke and soot. This will clog the flue passages, reducing draft and aggravating the trouble. The result is, the flame dies. Always check to see if the furnace room is getting an adequate supply of air, especially with chronic smoking complaints.

If a pot type burner will not light, check the tank to see if there is oil. If there is, check the safety lever to see if it is tripped. Reset it, if it is, but find out why it was tripped. This procedure was covered in an earlier part of this article. This is an oil flow problem, or it may be that there is oil of too heavy a grade being fed to the pot.

Sometimes pot type oilfired hot water heaters will not furnish sufficient quantities of hot water. This may be due to a defective hot water temperature control. A more likely condition is that the heater is too small. Check on the demand and see if the storage and recovery capacity of the heater is sufficient to take care of them. The use of an oil that is too heavy can cause this. In order to obtain a clean fire with such an oil, it requires cutting back the rate of flow. Naturally, this reduces the number of Btu liberated and results in less hot water. To remedy this, use a lighter oil which can be burned in large quantities with a *clean* fire, permitting a heat release rate that is high enough to provide sufficient quantities of hot water.

Excessive draft will reduce the quantity of hot water produced by such a fire. High draft just exhausts the heat up the stack instead of it going to the water heater. The result is not enough hot water. To get a graphic picture of the effect of draft on such heat loss, take a stack temperature reading after the unit is hot, with the draft control wide open and with it tightly closed. Notice the difference. Concrete evidence of the sensible heat waste caused by excessive draft!

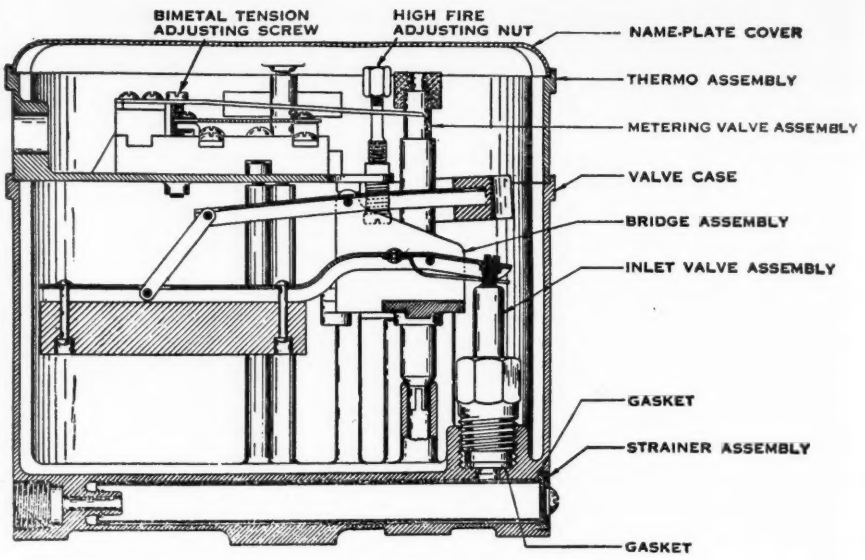


Fig. 5. *Single float control valve used on Miller burner.*

OHI and YMCA Combine on Oilheating Sales Course

SALES INSTRUCTION for oilheating men will be inaugurated September 26, at New York, in what is believed to be the first formal course in oil heat selling. Oil Heat Institute directors, at their July meeting, authorized cooperation with the Evening Division of the YMCA's Walter Hervey Junior College in sponsoring the seminar in specialty selling for the oilheating industry.

The program, announced jointly by A. E. Hess, OHI managing director, and W. Albert Lotz, president of the college, will be launched with the fall college term, beginning September 26. Mr. Hess points out the seminar will be tailored to fit the needs of the industry, which is "in desperate need of qualified sales personnel."

While the first sessions are likely to draw men only from the New York Metropolitan area, it is hoped students will attend from the entire Eastern Seaboard eventually.

Scheduled in 24-week sessions, the seminar offerings are sales techniques, motivations, oil heat information, sales psychology, public speaking and heating equipment orientation. All candidates are to be tested for aptitudes prior to admittance. Although the first session will be limited to twenty students, midwinter classes are expected to reach a capacity of sixty.

Frank Thomas, dean of the evening college, who will administer the program, states the project method of teaching will be used. Students will be assigned practical projects involving all phases of selling and these projects will be coordinated by three instructors, specializing in sales, public speaking and mechanical aspects.

Assisting college officials in preparing the course of study are T. A. Crawford, chairman of the OHI Publicity Committee, and general manager for Timken Silent Automatic, and Carl Watres, Timken sales manager in the New York area.

Mechanical phases, which will include study of various types of burners, controls and practical applications of installation surveying, will be taught in the well equipped heating laboratories of the YMCA Trade & Technical School.

Discussing the new program, Mr. Hess says it is aimed to the dealer who lacks facilities to conduct a sales training program. It is designed to provide the fundamentals for a professional sales job in the oilheating business, and also will serve as a refresher course for salesmen now actively engaged.

Admission to the course is through the Director of Admissions at Hervey College, 15 West 63 St., New York.

Oil Preheating Problem

THIS SHORT-SHORT service story has not yet come to a happy ending.

Some years ago a horizontal rotary cup oilburner, of the fully automatic type intended to use No. 6 oil, was installed with the steam-type indirect oilheater shown in the upper diagram. The way things turned out when No. 6 oil was used, the burner could not start automatically without help after it had been idle long enough for the boiler to chill. When not filled with steam, the suction line heater did not heat the oil of course. Aside from that, the oilheating was poorly controlled. When the burner was stopped for a few minutes with steam pressure on the boiler, starting the burner resulted in its receiving overheated oil from the tubes of the steam-type oilheater.

A janitor coaxed the burner into starting when the boiler was cold, and babied it along through spasms caused by erratic oilheating, and for years the owner was more or less satisfied.

Along came a service man one day, called in to tend to ailing safety controls, and he suggested improving the oilheating arrangement. He aimed to make it similar to the arrangements used for lately-installed horizontal rotary cup burners he serviced. Knowing the burner started hard at times and often needed understanding care even with the boiler steaming, the owner said go ahead with the improvements.

The service man discarded the old suction line heater, installed a much larger heater in the return line, and hooked the new heater to the boiler in the under-the-waterline fashion that would keep it hot for hours while the burner was idle. He piped the return line to the bottom of the oil tank and fitted it with the pipe tee the lower drawing shows. The right side of this tee connects to the suction line, the left side is open to receive oil from the tank. The suction and return lines are 2" size right up to the burner.

"The oil pump on the burner will draw 60 gph from the suction line," reasoned the service man. "Firing 40 gph, 20 gph of hot oil (heated by the return line oilheater) will pour into the tee at the bottom of the oil tank. There it will mix with 40 gph of cold oil drawn into the tee from the tank. That gives the suction line 20 gph of hot oil mixed with 40 gph of cold oil from the tank."

This reasoning was not bad but, to the service man's bewilderment, the burner performance was not good. Instead of performing better than before, the burner did worse, plainly because of poorer heating of the oil.

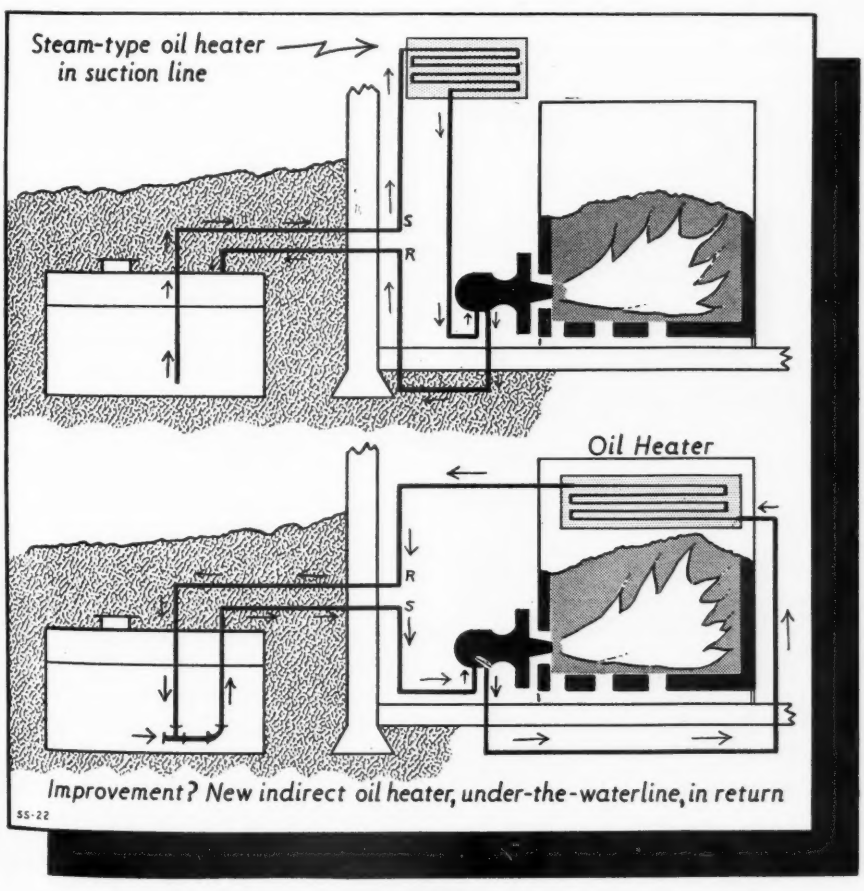
The owner, now working on the burner with the janitor, described the situation this way, "We used to have starting trouble, caused by the oilheater's being cold when it got no steam from the boiler, but we obtained good, efficient burning once we got steam from the boiler. True, starting and stopping the burner with a head of steam on the boiler called for burner adjustments. But by keeping the burner running steadily we could burn the oil at high efficiency.

"Now there is less trouble starting the burner after it's been idle four to eight hours, but we have a new kind of trouble. Even when we keep the burner running steadily, we can't get the clean, bright, flame we used to have. The flame is full of big sparks and it doesn't burn clean, thereby wasting a lot of fueloil."

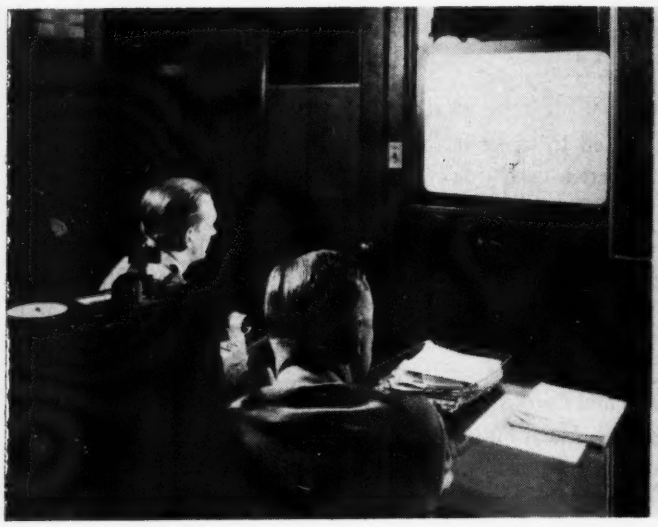
fueloil & oil heat Short Short Article on Burner Service

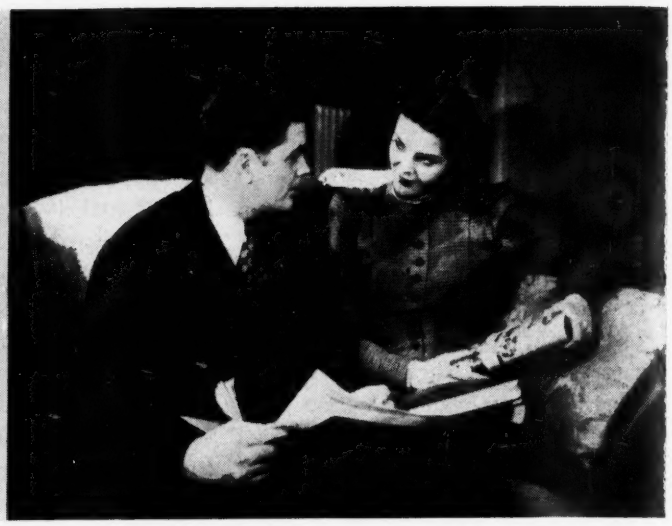
Feeling the suction line close to the burner, together with seeing that combustion was poorer than it had been, made the service man realize that in the past the oil fed to the burner must have been much hotter. Then, checking, he found that the burner was returning little or no oil to the tank because it was giving a larger flame than it was built to give.

To date the troubles have not been remedied. At times the service man thinks his new method for heating the oil will work only if a larger, proper-size oilburner is installed. Again, he considers fitting the old burner with a specially made pump having twice the gph capacity of the present pump. He fears now that excellent combustion might be obtainable only through steam-heating the suction line oil to 160° or 180°. High cost of more changes is much on his mind.



Improvement? New indirect oil heater, under-the-waterline, in return





Pictures Help the Sale

Visuals Also Drive Home Points in Training

by
Lyne S. Metcalfe

USES FOR VISUAL AIDS in the fuel and heating equipment field have steadily widened since the war. Films have been used for training artisans, servicemen, and salesmen. Still another use which is adapted to the coming competitive markets for fueloil and fueloil equipment is that of *demonstration* and selling—either with pictures shown before prospect groups, at the deskside or in the home.

After all, most fueloil equipment is heavy and hard to explain. The film provides a visualization which forms the basis of the salesman's demonstration. To name one instance: The Minneapolis-Honeywell people's soundfilm, "Seven Points To Comfort," which has been widely used for showings before home owner and trade groups. In this picture heat control equipment is pictured and explained in simple terms so that the average layman can understand the importance of the equipment to a thoroughly comfortable home.

In the case of burner units, the visual method of demonstration makes it possible to use cutaway drawings and reveal the principles upon which the unit operates. Feature of economy and efficiency can be indicated by either the salesman using the screen or elaborated by the oral commentary on film sound track or disc record.

The film techniques available to the industry for this purpose are varied.

Especially in the case of heavy or not easily portable products, or more or less complicated ones, requiring detailed explanation and demonstration, films have proved their ability to do an outstanding job in aiding salesmen. From many years of experience in helping *train* salesmen, and in speeding up the job of training them, the many improvements in picture techniques and simplification of equipment to show them—portability, ease of setting up, and of operating—films, miniatures and other visual aids are more and more being adapted to the purpose of direct to customer selling.

However, some questions naturally come up when the sales organization of any concern in the trade considers the visual medium as an aid to the sale and demonstration of its products and/or services. As a result of many years of practical experience, not only in assisting large sales organizations to train sellers by means of many mediums (without prejudice as to type) the Jam Handy Organization's research in this field has produced answers to many such questions.

For instance:

a) What type of film is best suited to the particular demonstration or selling job?
b) What is needed in the way of deskside or office projection equipment?
c) How much training does the average salesman need to be able to hold a smooth picture showing?
d) How shall the film (or other visual aids) be presented as to meeting or conference procedure to get and hold maximum prospect's or customer's attention?
e) How shall selling-demonstration pictures be shown in connection with other of the organization's selling techniques, methods, means and policies?
f) How shall sales demonstration showings be arranged, and by whom?

It is not, however, in the mere field of complicated or hard-to-carry around products that films serve best in selling. Motion picture techniques and treatments today give the user for selling purposes a wide range with which to reveal complicated hard-to-explain features and facts about product and/or service. If the picture is of the silent type, the salesman is provided with a properly arranged and "patterned" pic-

torial guide with which to give his sales talk or which serves to implant the basic selling ideas for discussion *after* the showing.

There is also the allure which illuminated, projected pictures, especially out of the theater, have for nearly all of us and the dramatic interest which films may and do bring to even a somewhat otherwise drab salesman's story.

For years, sales managers have sought some means of making certain that the carefully planned sales talk, the answers to prospect's common questions that arise would be delivered uniformly, by all the salesmen on the staff. But in many instances pep talks fail to do this since once the seller is out on his own in the presence of the prospect, he is apt to follow the natural human instinct of improvising or diversion. Especially where he faces the negative type of prospect who gets him "off the track."

Sales Talks Become Uniform

That is one great advantage of the film no matter what type it may be. It tends to keep the company's salesmen "on the track" since it cannot be changed in arrangement or continuity. What is said, if it be sound, is always what the home office has approved, what is shown is beyond the power of the salesman on the spot to change.

One other thing. Because he hears and sees the story presented in its right way, the salesman improves his technique by vicarious instruction.

Films of most types are as easily subject to revision as product or services or sales story changes, as a loose leaf book. This makes the visual selling aids always flexible where the home office finds it necessary to make changes in product services or policy prices and points from time to time, or season to season.

It is almost a generally accepted principle in postwar selling, and especially in the types of markets the trade confronts today, that the salesmen, more than ever, must make each golden minute he can get of the prospect or customer's attention count. It has been estimated as a result of millions of training film showings during the war, official or otherwise, that visual aids reduce the time required to get over a series of connected facts and ideas by as much as two-thirds. More than that, visual aids of any kind, make the seller's call something more than a casual one. They introduce a new note of novel interest into his call or his call-back that usually is welcome.

Furthermore, the salesmen who must sell more than one person in a given prospect's family or organization, can more easily bring them all together in one sitting when pictures or other visual aids are part of the contact.

Films As Direct Selling Tools

With respect to films as direct selling "tools," is may be said that the slidefilm has proved of great value in this field, especially where sound or commentary is provided on accompanying records. That is, where the product or service being sold does not require that anything be seen in *motion* to be clearly understood.

However, it would, as Jam Handy points out, be unwise to consider visual aids of this type as complete sales tools in themselves, easing the way of the salesman to the point where he can sit back and let the pictures do the job. The fact is that fully half of the selling job remains for him to do. Films can ease the approach, facilitate the appointment, lay the ground work for the sale; but, the salesman will have to capitalize on all this before and after the showing itself. Pictorial presentations always provoke questions among prospects, which is a healthy sign in any sales job since it:

1. Reveals customer interest.
2. Brings objections and doubts out into the open where the salesman can attack them.

However, a distinction must be made between those types of pictures and programs which *indirectly* rouse interest and create demand, and those described above which are part and parcel of each sales contact. Usually, where sales organizations in this field have adopted visualized direct selling aids, such films and the procedures of their use or application have been a part of a well planned over-all program with the advantage of expert assistance.

Much will depend upon the marketing policies and mechanics of the organization, upon its selling policies, its field setup, objectives. Few programs of this kind are without a basic training program behind them, including the training of the salesmen to use the visual aids properly and effectively.

Also, such programs often include:
Institutional films, to sell the organization itself, its history, to sales staff and field.

(*Continued on page 157*)

1. Realize importance of comfort.
2. Discuss with experts.
3. Don't skimp.
4. Know what to expect.
5. Select fuel and system.
6. Don't forget other factors affecting heating.
7. Control the heat.

"Seven Points to Comfort" *as dramatized in the sound film referred to in the accompanying article.*

A Question of Draft

Considerations of Plus and Minus Pressure in the Firebox

by
Fred Feigenbaum

BECAUSE OF HIS close association with the draft it might be presumed that the experienced oilburner man would be familiar with all its manifestations. But a conversation with any average installer or serviceman would reveal that his understanding of draft is a fuzzy mixup of fact and fancy. Servicemen in the course of time get many of the main facts straightened out in their minds because the process of solving problems results in the elimination of dead wood. Installers who do not work at service rarely have any draft problems to solve, so any odd opinions they may have acquired sometimes persist for years.

A number of oilburner men were induced to give their views on the subject, not in the form of a poll of opinion, but in small groups, in coffee shoppes and supply stores. A few questions were asked, the first important one being:

What effect has too much draft on the efficiency of an oilburner?

They were all in agreement. High draft causes the hot gases to be pulled through the boiler so fast that they don't have time to give off their heat to the boiler surfaces, resulting in high stack temperature.

Did you ever use a stack thermometer to find this out?

The replies varied. A few answered yes. Most of them had not. They had merely accepted the common belief that high stack temperature is the natural result of high draft. It sounded so logical that they had no reason to believe otherwise. It became apparent that few of them had ever used a stack thermometer for any purpose.

How much hotter do you think a stack would get with high draft than with low draft? The questioner was not surprised that nobody tried to pin him down to exact draft-gauge readings.

The answers varied between 200 and 300 degrees. The men who claimed to have made such comparative tests went out on a limb on this one. They agreed with the others, which made it clear that they had given the wrong answer to the previous question.

Would it surprise you to know that there is seldom a variation of more than 100 degrees between the lowest and the highest stack readings possible on any particular job? Or that the average variation is less than 60 degrees when the higher stack temperature is less than 600? This was a more or less rhetorical question to get their reaction to an idea which contradicted a belief existing in their minds. In general they were apathetic. A few disbelieved the statement, but not violently. One man was angry at the attempted upset of a preconceived idea. He wanted to bet.

Does high draft have any effect on CO_2?

All agreed that CO_2 would be lowered if draft were increased. *How much? A couple of per cent? A lot?* No figures. But the indication was that they had never given it much thought before.

Where does the air come from that reduces the CO_2?

Through the burner blast tube. By infiltration through unsealed spaces between sections, around door frames, etc. No disagreement on that.

How about the air coming into the boiler by infiltration? Would you expect a higher or a lower stack temperature?

There were mixed answers. Thinking was muddled, so the question was clarified.

Suppose the boiler was absolutely tight, so that there was no infiltration between the fire and the smoke hood. But there was space for infiltration in the smoke hood itself, below the point where the stack thermometer was inserted. *Would you expect the stack temperature to be higher or lower?*

All agreed that the stack should be cooler because the incoming air would dilute the heat in the gases leaving the boiler.

Suppose, instead of being in the smoke hood, these openings allowed air to come in about two feet back in the boiler. The mixing with the gases would be taking place while they were still in a position to heat the boiler surfaces. *Would the stack temperature be higher or lower than if the air came into the stack itself?*

Most of them took time to figure it out. The answer in each case was the same. Higher. It developed that since excess air coming through the boiler had some effect in raising stack temperature, this effect would be greater as the point of infiltration was placed closer to the fire, even though in all cases an equal volume of air would reduce CO_2 by the same amount. Air coming from the burner should therefore raise the stack temperature most.

When it was stated that the loss due to the lowered CO_2 was several times as great as that of the higher stack temperature, in cases of excessive draft, this comment came from several men: "What's the difference whether the loss is caused by high stack temperature or lower CO_2? It's a loss, isn't it? It just shows that too much draft is no good. That's why they put draft regulators on oilburner jobs."

These questions were not asked in a spirit of criticism of the individuals, but to uncover the state of mind of some men to whom the subject of draft should presumably have some importance. The replies indicated that a little basic misinformation can go a long way. They understand draft in a general way, but apparently are too willing to take things for granted. Loose thinking of this sort on many of the "facts of life" of oilburning is probably responsible for the large number of mediocre installations to be found.

The notion about draft causing enormous rises in stack temperature is a holdover from the days when many present oilheating people were installing coal-burning heating plants, or possibly lived in houses heated with coal. When the dampers of a coal furnace are opened, producing more draft, there can be a large rise in the heat of the stack. But there is a good reason. The higher

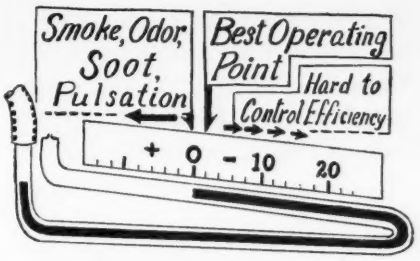
draft causes the coal to burn more rapidly, so that while more heat is being transferred to the boiler, there is a larger loss up the chimney. This can amount to several hundred degrees.

With oilburners there is no such increase in the rate at which the fuel burns. It continues to come out of the nozzle at the same rate as before the draft was increased. The larger quantity of air reduces CO_2. The total heat resulting from burning a given quantity of fuel is distributed in a larger volume of gases. One of the observable results is a somewhat higher stack temperature. When a draft change is made decreasing CO_2 from 12% to 6% there will be a definite rise, say from 600 to 680 or so. It will never go to the 800 or 900 degrees that might be predicted by those who have never made such a test. These are figures with a strictly coal-burning background and do not apply to oilburning.

As for the theory that the greater velocity of the gases resulting from high draft gives them less time to give off their heat to the boiler surfaces, you can take it or leave it. The factor is pretty small in relation to the loss due to the lowered CO_2. But if this belief is accepted it should be understood that convection works the other way in most other things. Unit heaters and coolers with multi-speed fans are capable of greater heat exchange as the air speed through them is increased. The point at which air moves too fast to pick up the heat of an aircooled motor does not seem to bother the aircraft designers.

One of the basic reasons for much of the hazy thinking about draft is that pressure and vacuum are regarded as separate forces by many people. The expression "negative pressure" seems to be self-contradictory, whether used in connection with the behavior of oil in a suction line, soda in a straw, or draft in a chimney. Even a course in high school physics often does not remove this psychological barrier to clear thinking from some minds.

The calibration of a compound gauge demonstrates the continuity between pressures above and below atmospheric, but the fact that these values are expressed in different terms actually accentuates the separation at the zero mark. The phrases "inches vacuum" and "pounds pressure" are stumbling blocks



Over-the-fire *draft gauge readings, indicated above, reflect conditions encountered in most installations.*

to newcomers in many trades. In the oilheating industry, where the draft gauge has considerable importance, some have difficulty in getting accustomed to a third scale, "inches water," expressed in decimals. It is easy to write or read these expressions, and they look all right on paper. But it is cumbersome to use them in conversation, especially on the telephone. Some people bypass the decimal, referring to 7 inches of draft instead of seven-hundredths; you wonder if they are doing this in ignorance or simply for convenience. Some day we will get around to a simpler system of expressing the reading of a draft gauge, understandable to everybody, even though meaningless. You don't have to know what BTU means to use it in measuring heat loss.

Possibly some users of draft gauges think they sound scholarly when they say "minus-point-oh-seven inches." It reeks of math to the average Joe in the oilburner business, who wouldn't care if these minus and plus points were called "goofers" and "geefers." At least that would get them down out of the highbrow jargonese.

The man who wants to study draft can find the subject included in heating and oilburner textbooks, with mathematical formulas for those who like them, so that chimney capacity can be estimated on paper. But he will also discover that the figures given work out very well for tall, wide chimneys, petering off into unreliability for the small domestic sizes. There are many other things to be considered in dealing with the one- and two-story chimney.

The most important measurement of draft cannot be made with a draft gauge. This is the one the dealer needs before he installs a new burner, or more especially, a boiler-burner unit. Most burners are sold in the summer and fall when the chimney is cold. Even if the job is operating with coal he cannot get any more than an approximate indication of what to expect when the new job is hooked up and adjusted to its proper firing rate.

The burning paper test is often used to determine the capacity of a small chimney. The smokepipe is removed and the chimney base is cleaned out. A sheet of crumpled newspaper is placed in the bottom, being careful that it does not block the passage. It is lighted and the action is watched. If it begins to blaze quickly and the fire product is carried up, the chimney is regarded as at least clear. If the entire burning mass is carried right up during the first minute the chimney can be considered excellent. Sometimes the first test fails because of dampness in the passage. Another try or two may produce a better showing. But if the flame is lazy, or smoke comes out into the basement, the chimney is blocked. Further investigation must be made before it can be approved for the installation of an oilburner.

This test is regarded by some as crude and inconclusive, giving no clear indication of the way the chimney will respond to a stack temperature of 500 degrees. But under the observation of a man with some practical experience with draft it indicates something the draft gauge does not show, the volume of gases the chimney is capable of removing.

What every oilburner man wants to know is what to do when he is stuck with a chimney that is not producing enough draft, or is behaving erratically, with good draft one day and poor draft another. The customer is on his neck because there is soot all over the basement, and smoke or odor throughout the house. These are the simple symptoms; the more complex one is that of pulsation, which involves other things. It is a pretty deep study in itself, but understanding draft is essential to it.

One thing is certain when smoke, soot, and odor are found outside the unit; there is plus-pressure at the fire instead of minus. These things come out through leakage between the boiler or furnace and the base, the base and the floor, between the sections of a cast-iron unit, around doors and door frames. Most

units are not perfectly tight. Some installers are conscientious about sealing every possible leak, others are careless. But there is almost always some leakage. This leakage could be partly responsible for draft loss if it were INFILTRATION. But in cases of EXFILTRATION, resulting from plus-pressure at the fire, some of the combustion products are exhausted into the basement, relieving the chimney of a small part of its job. That is what the complaint is about. The leaks should be sealed, but it will not improve the draft.

The whole draft question revolves around one simple point: The oilburner works best when it fires into a slight vacuum. The difference between a plus .01 and minus .02 can make all the difference between a dirty, smoking, smelly job and a clean, trouble-free installation. If the draft gauge indicates a small minus over the fire it does not matter what the draft at the stack may be. It is enough. If it shows a positive over the fire everything possible must be done to increase total draft so that a negative indication can be obtained at that point.

Right here an important observation about draft measurement should be made; that because a true draft reading is difficult to take over the fire most people are satisfied with an approximation. They arrive at it either by estimating the draft-drop through the unit and subtracting it from stack-draft, which is easy to get; or they try to take it through the partly opened front door or plate. Both of these methods are entirely inaccurate, so that the study of a particular draft problem gets off to a bad start.

There is only one sure way to get this measurement accurately; if the boiler has no opening for the insertion of the gauge it will be necessary to drill one. The fire must be burning in its normal way, in a closed combustion space, open only to the boiler flues. The over-fire index is too important to be dependent on half-way methods. Those who use them are only fooling themselves.

Having decided that draft must be improved the serviceman should look around for visible draft hindrances before considering the chimney. He may find that the smokepipe has several right-angle bends. Some installers with a passion for neatness like to square off all joints. It will often be found that some of these can be converted to wider angles. This will reduce turn-resistance greatly, besides cutting down overall length.

He should not attempt to improve draft by sealing the draft-regulator closed. This device reduces draft, but is not there especially for that purpose. Its business is to regulate it to a certain necessary minimum, to keep fire-efficiency from being altered by draft changes. Closing it should be considered as a last resort, after other possibliities are exhausted.

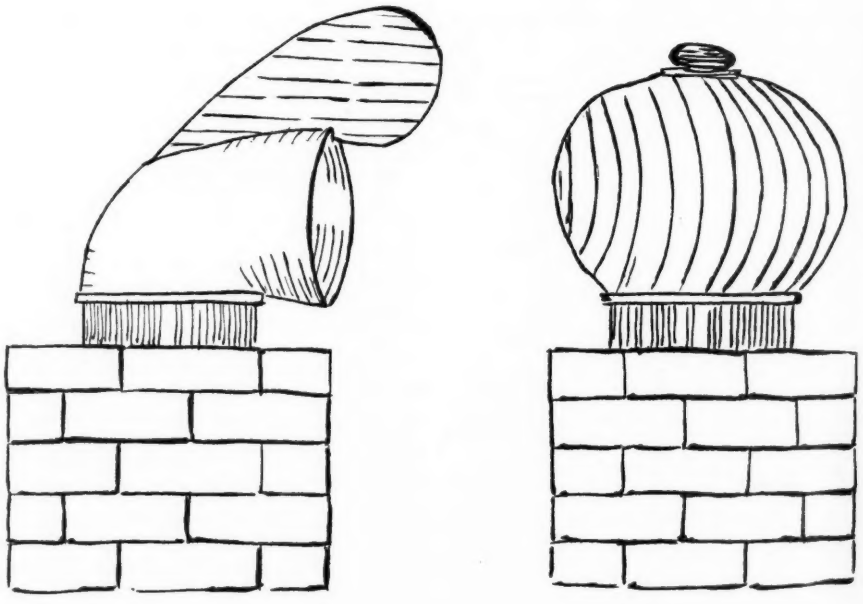
The entrance of the smokepipe into the chimney is often square; if possible it should be given a definite slope; the steeper the better. The pipe may extend too far into the chimney. This is easily corrected. If there is a clean-out well beneath the smokepipe there could be eddy-currents set up, resisting the flow of the gases. If other means fail to increase draft sufficiently it may be necessary to fill this space and streamline the bend. Not now. Later. Clean-out wells are useful. Be sure the door and frame are tight.

A mirror set at 45 degrees at the chimney bottom will reveal many things about the interior. If straight it should be possible to see the sky. Obstructions or offsets can be discovered. If there is enough light the condition of the lining can be seen. The better chimneys are tile-lined; many others are not. But rough masonry is usually made smooth in time by a coating of soot. Unlined chimneys are more likely to have air leaks, reducing draft. Leaks are hard to discover; the best clue is the condition of the mortar between the bricks outside.

The top of the chimney should be considered especially in relation to other high parts of the house. A chimney at the lower side of a peaked roof can be troublesome. In some winds the down-flowing currents create pressure areas at the chimney top. Nearby trees can have similar effects. A high building near a chimney can cause an area of positive pressure making it difficult for the gases to rise in the chimney. This kind of trouble is especially common in close-built cities.

Ornamental masonry at the chimney top can give a lot of trouble. It should be removed. Nothing should interfere with the upward flow of gases leaving the chimney.

Draft inducers actuated by the wind should warn a prospective installer of previous draft trouble. Nobody has one who doesn't need it. The turbine type is the least troublesome. The weathervane type, which holds its outlet always



Wind-operated draft inducers, *which often can be indicators of past chimney trouble. The weathervane type, on the left, can give trouble at the burner if it becomes stuck or during rapid wind changes. The turbine type, on the right, may help when the wind blows and presents no service problems.*

demand DETROIT CERTIFIED CONTROLS

DETROIT CRC-433 For Vaporizing Burners
—Provides an automatic fuel system for vaporizing type space heaters, water heaters, ranges, floor furnaces, or basement furnaces. Fuel is automatically supplied to the burner according to consumption. Equipped with easily cleaned strainer. Motor driven vane pump operates only when fuel is needed—shuts off automatically if tank runs dry. Quiet in operation.

Capacity 80 c.c. per minute, 1⅓ gals. per hour at 25 ft. suction lift. Write for bulletin No. 218.

DETROIT CRC-533 For Rotary and Pressure Burners
—Provides automatic fuel supply for domestic rotary or pressure type burners and runs only when the burner is operating. When used with burners requiring less fuel than supplied by the pump, a by-pass connection returns excess fuel to the tank. Pumping unit is rotary vane type—quiet running. Has built-in, easily cleaned secondary strainer.

Capacities: (Firing rates at 25 ft. suction lift)
Model 2—3 gallons per hour
Model 3—5 gallons per hour
Write for Bulletin No. 224.

DETROIT

FUEL TRANSFER PUMPS PUT NEW 'LIFT' INTO YOUR SALES!

Now is the time to push these new high-profit extras—not only with new heating customers, but with any previous purchaser who does not have these extra conveniences. DETROIT Fuel Transfer Pumps assure sales because they possess the strongest possible customer appeal —*they save work.* Like all DETROIT controls, they are designed right, built right, and proven right—and are certified by the industry's ablest builder of quality controls. Write or phone your nearest DETROIT wholesaler and stock up on these fast-moving, easy-to-sell profit builders.

DETROIT
LUBRICATOR COMPANY

5900 TRUMBULL AVE., DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

CANADIAN REPRESENTATIVES: RAILWAY & ENGINEERING SPECIALTIES, LTD. — MONTREAL, TORONTO, WINNIPEG

"DETROIT"

DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIPMENT • DETROIT EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

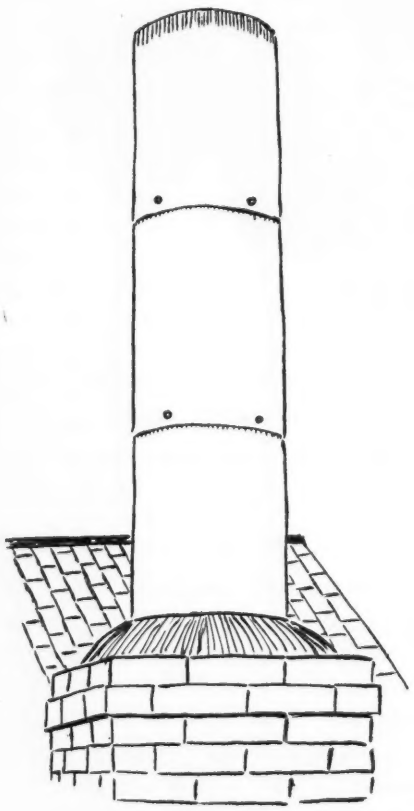
away from the wind, may look like a logical idea. It worked well with coal, but with oil it can be responsible for service problems. Because its position depends on wind movement, its outlet may be facing in the direction of the next breeze. If the burner is running the momentary pressure may prevent the gases from rising in the chimney. The fire lashes back into the burner, sometimes out into the boiler room. Insulation is burned off ignition cables. Ignition trouble develops; sometimes puffback. A serviceman unfamiliar with the symptom is often at a loss to explain the cause of the burned wiring.

The best practice is to remove any of these devices. Even though they improve draft they do so only when the wind is blowing. The oilburner must have draft even if there is no wind.

In almost every case of poor draft a large improvement can be made by increasing the height of the chimney. This is a generally overlooked possibility, because most oilburner people cannot see very far beyond their own installation. It will not only improve a low chimney, it will also add to the draft obtainable in a narrow one. The extra intensity will cause the gases to be moved faster, so that more of them can be removed. Many stubborn cases of pulsation have been remedied by increasing height.

If the customer is willing to pay for it the best way to extend a chimney is with permanent masonry lined with tile. But there is usually a lot of delay in getting this done. Meanwhile the draft trouble continues. To prevent interim service calls, and to see if the proposed change will really improve things, some oilburner people build a temporary extension of standard smokepipe. Two or three lengths will increase draft measurably. The joint between the extension and the permanent chimney is made as smooth as possible. The outside should be grouted with concrete. Sheet metal screws will secure the sections.

No rain protector should be installed at the top. It might interfere with the upward gas flow. This is to be considered a strictly temporary measure, though most owners never get around to building a permanent extension. If it should rust through in two or three seasons it can be replaced cheaply. Meanwhile it can be depended on to keep a draft headache under control.



Extending chimney *with smoke pipe represents an easy method of correcting problems of height, area or wind variation.*

"It appears, gentlemen, that we'll have to adopt our competitor's tactics, and turn out a reliable product"

1949 Guide Is Largest Ever Issued by ASHVE

THE 1949 EDITION of the Heating, Ventilating and Air Conditioning Guide, containing a 992-page technical data section, and a 392-page catalog section of the products of 249 manufacturers, is the largest ever issued by the American Society of Heating and Ventilating Engineers. Many special features and numerous revisions which bring the technical data up to date with current practice and the most recent research were achieved in the 1384-page volume through the cooperation of more than 40 members and many other authorities, according to R. C. Cross, chairman of the ASHVE Guide Publication Committee, who prepared the book.

Published recently, the 52 chapters of this 27th edition of the Guide are grouped in sections having the following headings: Principles, Human Reaction to Atmospheric Environment, Heating and Cooling Loads, Combustion and Consumption of Fuels, Heating Systems and Equipment, Air Conditioning, Special Applications and Installation and Testing Codes.

Both the technical data section and the catalog data section are completely cross-indexed for ready reference. The latter section provides concise information on the sources of supply for heating and ventilating equipment.

Some special features are the addition of a section on design, rating, installation and operation of space heaters, enlargement of the section on vapor transmission and addition of new temperature data for both summer and winter.

Research conducted by the Society is the source of new tables of circular equivalents of rectangular ducts, along with three methods of sizing ducts. The chapter on steam heating systems has been improved.

The Guide, priced at $7.50, is available from the American Society of Heating & Ventilating Engineers, 51 Madison Ave., New York 10, N. Y.

Omaha Moves Rapidly To Automatic Fuels

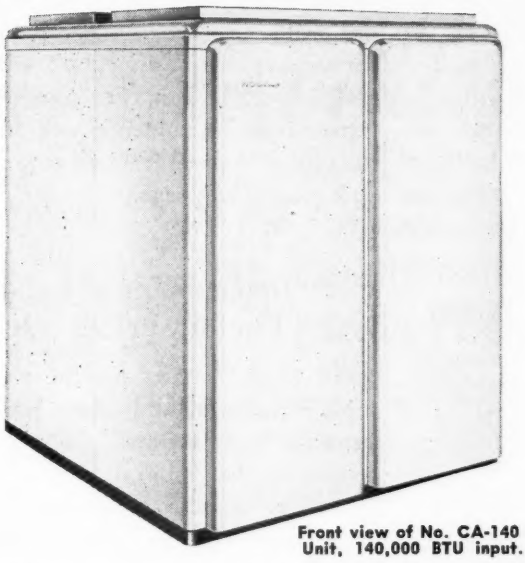
IN FOUR YEARS since the war ended the number of oilheated homes in Omaha has risen 50%, gas heated homes 59%, and those coal heated are down in number by 11%, according to a continuing study by the *Omaha World-Herald*. The table shows the shift by years.

	Number of Homes				*Per Cent of Total*			
	1949	*1948*	*1947*	*1946*	*1949*	*1948*	*1947*	*1946*
Oil Heated	23,907	22,115	16,376	15,903	26.3	26.7	19.8	19.2
Gas Heated	17,362	14,495	12,169	10,933	19.1	17.5	14.7	13.2
Coal Heated	49,995	46,383	54,537	55,990	55.0	56.0	65.8	67.6

NOW "You're In" ON THE BIG GAS JOBS!

with the New Luxaire CAST IRON...GAS FIRED Air Conditioning Units

CAPACITIES UP TO 200,000 B.T.U.



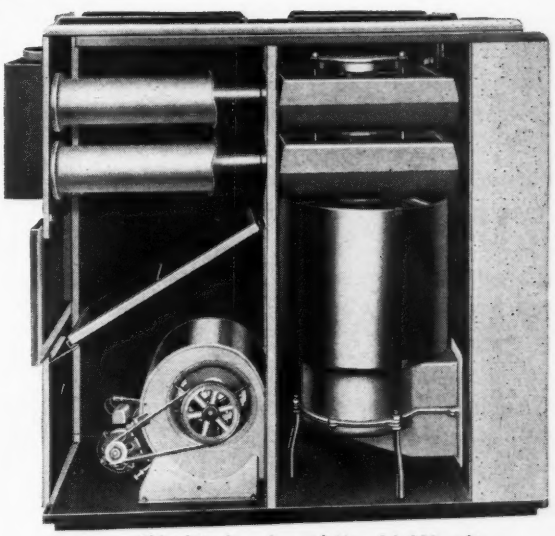
Front view of No. CA-140 Unit, 140,000 BTU input.

"Something new has been added" to the Luxaire line of Gravity Furnaces and Air Conditioning Units—larger sizes of CAST IRON, GAS FIRED Air Conditioning Units with up to 200,000 BTU Input per hour!

The Luxaire CAST IRON, GAS FIRED series of Gravity Furnaces and Air Conditioning Units now ranges from inputs of 50,000 to 200,000 BTU per hour! Now, you and practically every homeowner, builder and architect who prefer gas equipment with *Cast Iron* Heating Elements can obtain the type and size that they require from Luxaire.

Completely new in conception and design, Luxaire cast iron gas fired units have such advanced, 1949, features as:

1. Round Combustion Chamber.
2. All joints between combustion chambers and radiators are horizontal joints, leak-proof and gas-tight with cementing.
3. Round, Ribbon type gas burner.



Side interior view of No. CA-200 unit, 200,000 BTU input.

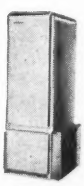
4. Radiator, or complete heating element can be removed for cleaning without dismantling cabinet or disturbing cabinet top, plenum chambers or ducts.

Write for new catalog just off the printing press.

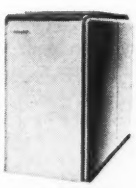
In addition to Cast Iron, Gas Fired equipment, the complete Luxaire line includes gravity furnaces and air conditioning units, of steel as well as cast iron construction, for all fuels, oil, coal and gas; also the new Counterflow units, Gas or Oil Fired, that discharge the air downward through the base of the cabinet.

See your Luxaire jobber for complete information.

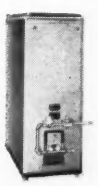
Series A Gas-Fired, Steel Air Conditioning Unit



Series H Gas-Fired, Steel Utility Air Conditioning Unit

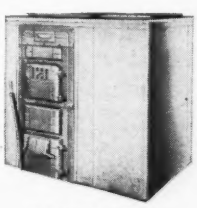


Series O Gun, Oil-Fired Air Conditioning Unit: also available in Utility and Gravity Furnace models. Convertible to Gas.

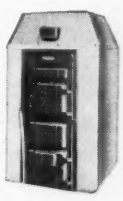


Series G Gas-Fired, Steel, Gravity Furnace.

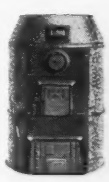
Series V Vaporizing Oil-Fired, Air Conditioning Unit; also available in Utility and Gravity furnace models. Convertible to Gas.



Series AC-700-F Coal-Fired, Steel, Air Conditioning Unit.



Series No. 700 Coal-Fired, Steel, Gravity Furnace; also available with Round Casing



Series C Coal-Fired, Cast Iron, Gravity Furnace; also available with Square Casing, and in Pipeless style.

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

fueloil & oil heat

Heat for Small Homes

How to Use a Riser with Forced Hot Water Systems

USE of heating risers for the heating of small rooms long has been common in steam systems, but it is not generally the best method because much of the heat is given off at a high level. Rooms heated in this manner pocket much of their heat near the ceiling. Because of its space limitations the heating riser is found most often in bathrooms and small bedrooms.

Small rooms, bathrooms especially, have little choice of floor space for radiator placement. A two-inch pipe, capped at the top, or continued into a similar room above, can be run in a corner and will take little away from the useful space in the room.

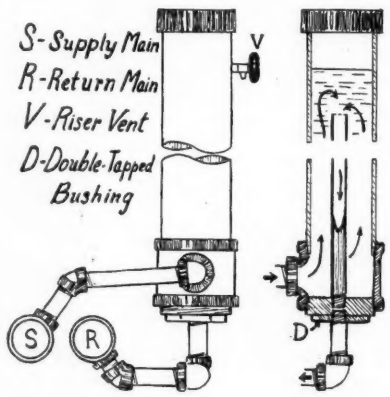
Because of the lower surface temperature heating risers have seldom been used in hot water heating systems. The fact that two pipes are needed is also a factor which has kept heating contractors from applying this method. It is difficult to prevent the pipes from becoming airbound, unless they are connected to an upstairs radiator.

The introduction of the circulator, and especially modern control systems by which it is possible to operate at much higher water temperatures, has altered these factors considerably. A surface temperature of 200 degrees makes a hot water heating riser almost the equivalent of steam in its ability to heat a small room. But it is still necessary to devise a means of preventing the frequent airbinding, and avoid the unsightliness of two vertical pipes if possible.

During and after the war, when radiators were hard to get, the writer had occasion to work with several heating men who were remodeling old systems or installing new ones in old houses. One of the ideas developed made it possible to install a single-pipe heating riser to be used with circulator systems, which did not become airbound easily. The several that were installed have been successful to the present time.

A half-inch branch is taken off the supply main in the conventional way. It is piped into the "bull" of a vertical 2 x 2 x ½" Tee. A 2 inch riser is taken from the upper end of the Tee directly to the room to be heated. The top end of the pipe is capped. A hot water vent valve is tapped into the cap, or into the side of the pipe near the cap.

Return is provided by installing a piece of half-inch pipe inside the two inch riser. The top end of this half-inch pipe should be about a foot below the vent valve, so that if there is a tendency for air to pocket in this particular riser



there will be plenty of space for it to accumulate before it becomes necessary to remove it through the vent valve.

The means by which the inside pipe is connected back to the return piping in the basement is a 2-to-½ inch double-tapped bushing in the bottom of the Tee. It need not be threaded tightly into the inside thread. The outside tapping is connected to the return main by a half-inch branch. It may be necessary to bring this branch into the underside of the return main because of height limitations, as shown in the diagram. This will not interfere with the movement of the water in any way.

While this hookup has been used in one-story applications there is no reason to believe it cannot be piped to two similar rooms, one above the other. Also there is no reason for its not being used in single pipe hot water installations. The same type of deflector-Tee can be used in the main which feeds water to the radiator branches.

If it is inconvenient to use half-inch solid pipe inside the riser, half-inch copper tubing can be substituted. The inside burrs from the cutter should be reamed out well to prevent their interfering with flow. The fitting at the double-tapped bushing should be full size with the tubing. The straight-through type used for suction lines at oil tanks would be best. The compression ferrule must be tightened well around the tubing to prevent its slipping down and causing stoppage.

◈

U. S. Department of Labor Fueloil Prices (June)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken June 15 (cents per gallon):

	Range	No. 1	No. 2	No. 3
Boston	12.93	12.75	11.10	..
Manchester	14.07	13.30	11.80	..
Portland, Me.	12.80	12.95	11.00	..
***Buffalo	13.33	..	12.62	12.62
*New York	..	..	10.42	..
Philadelphia	..	11.90	10.40	..
*Chicago	14.20	13.87	12.85	12.85
*****Detroit	..	14.29	13.26	..
Milwaukee	..	14.30	13.30	13.30
*Kansas City	..	12.83	11.80	11.83
Minneapolis	13.13	12.90	11.74	11.90
*Baltimore	..	12.04	10.91	..
Wash., D. C.	..	12.27	11.10	..
Jacksonville	..	13.37	12.45	..
Norfolk	..	12.28	10.30	10.30
Richmond	..	12.60	10.70	..
**Savannah	..	13.95	12.40	..
******New Or's	..	13.67	11.84	11.84
Portland, Ore.	..	13.94	11.64	6.55
****San Fran'co	..	13.70	11.38	6.45
*****Seattle	..	14.77	12.65	6.81

*Prices include 2 percent tax.
**Inspection tax of one cent per gallon included on kerosene only.
***Prices include 1 percent tax.
****Prices include 3 percent tax on all fuels except gas.
*****Prices include 3 percent tax.
******Prices include 3 percent tax on all fuels except gas, and one cent per gallon inspection tax on kerosene and fueloil No. 1.

◈

J. Edward Salter has succeeded Prescott A. Flage, retired, as Sun Oil Company district manager at Atlantic City, N. J. Mr. Flage joined Sun as a salesman at Philadelphia in 1921 and went to the resort city as district manager three years later.

AIRTEMP DEALERSHIPS AVAILABLE!

Investigate today–

Sell the famous Chrysler Airtemp Heating and Air Conditioning Products–Big Market–Strong Demand–Good Profits

● You'll find Chrysler Airtemp products a fine line to sell—well known and highly regarded—nationally advertised and in good demand. They are designed and built to high standards for dependable performance and long life.

Here are *quality* products priced to meet the needs of home, business and industry. Products to sell 12 months a year assure you profit opportunities in every season. And you'll find we back our dealers with close cooperation in advertising, promotion and field engineering service.

Investigate this opportunity while it still exists. Write today—without obligation—for full details. Or mail the coupon.

NATIONALLY-ADVERTISED PRODUCTS FOR YEAR-'ROUND SALES

(you can handle heating or air conditioning separately if desired)

Gas and Oil-Fired Furnaces and Winter Air Conditioners • Gas and Oil-Fired Boilers • Oil, Gas and Electric Water Heaters • Oil Burners • Coal Furnaces • Convertible Winter Air Conditioners for gas, oil or coal • Year Around Air Conditioning Units (Heats and Cools) • Anthracite and Bituminous Domestic Stokers • Blower Units for Furnaces • Stoker-Fired Water Heaters • Room Air Conditioners • Packaged Air Conditioners • Commercial Refrigeration • Condensing Units • Central Systems Cooling Equipment • Marine Refrigeration • Water Cooling Towers.

CHRYSLER AIRTEMP
DIVISION OF CHRYSLER CORPORATION

Chrysler Airtemp

"PACKAGED" AIR CONDITIONING
CENTRAL STATION SYSTEMS
HEATING AND COMMERCIAL REFRIGERATION

AIRTEMP DIVISION OF CHRYSLER CORPORATION
DAYTON 1, OHIO
In Canada: Therm-O-Rite Products, Ltd., Toronto

Mail Today for Details

AIRTEMP DIVISION, CHRYSLER CORPORATION
DAYTON 1, OHIO
Send immediately full details about the Chrysler Airtemp dealership arrangements, without obligation.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

F.& O.H. 7-49

Worst Kind of Air-Binding

SEEING A FUEL UNIT new to them, installation and service men must learn to set it up for operation with or without a return line. The instructions always are available from the manufacturers of fuel units.

Here's the ABC of fuel units:

A. Know how to set up the particular fuel unit for one-line or two-line operation. An internal port or bypass must be open when no return line is used, and closed when a return line is used.

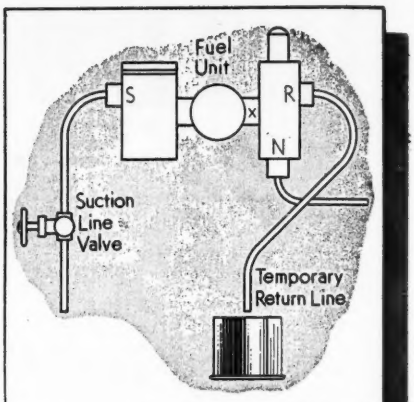
B. Every outside tank job should have a return line. If an inside tank is below the fuel unit, a return line should be used.

C. The usual inside tank installation does not need a return line. However, occasionally inside tank jobs are fitted with return lines because this provides certain advantages.

In Diags. 1 and 2, the connections are marked "S" for suction line, "R" for return line, and "N" for nozzle line. A small pipe plug, provided in addition and representd by "X," permits (a) applying a gauge to ascertain the nozzle pressure, and (b) air-ridding a unit that won't develop pressure because it is air-bound. To air-rid a fuel unit, run it with this plug removed or loosened sufficiently for air to escape. Have a can or rag handy to catch oil that spurts out when the pump develops pressure.

A study of Diag. 3 reveals why a fuel unit with a return line rids itself of small amounts of air, whereas a fuel unit with no return line air-binds easily. Oil follows path A-B-C through the strainer and pump. When the pump starts, first the shut-off valve at D opens wide as the piston of the automatic valve is pushed upwards by oil pressure developed by the pump, then the piston goes higher and opens port E enough to regulate the pump pressure. The pump may deliver 15 gph to the automatic valve. The nozzle may take 1.0 gph. Then 14 gph would come from the return connection at E.

fueloil & oil heat Short Short Article on Burner Service



To start a stubborn burner, pump airbound. No return line but burner must lift oil from outside tank.

1. Set up fuel unit for temporary two-line operation by closing its bypass.
2. Install temporary return line to bottle or can.
3. Run burner. Use gauge port to rid pump of air. Remove plug from port.
4. After flame burns properly, close suction line valve to hold prime, stop burner and set up again for one-line operation.

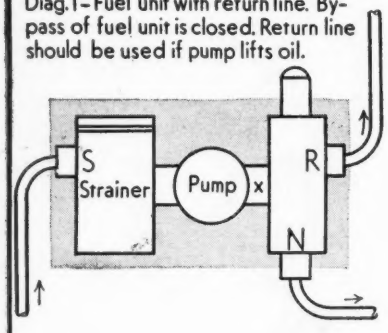
The pressure regulating port at E never closes dead-tight. With no pressure under the piston, air can leak through port E to return line F when an airbound pump is trying to start.

With a return line, any air from the fuel unit escapes and stays out of the unit, going to the oil tank through the return line. When no return line is used and the bypass inside the fuel unit is used, air from the pump takes path F-G-H and goes back into the strainer of the fuel unit; air can escape from the fuel unit only very slowly through the nozzle, mixed with the oil sprayed by the nozzle. Without a return line, air that finds its way into the fuel unit goes round-and-round for a long time.

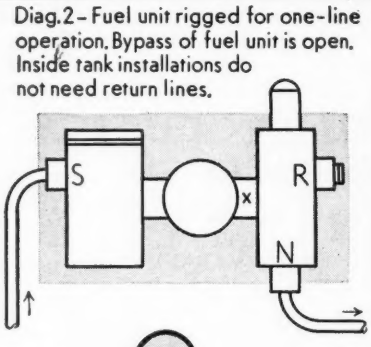
In service work, you may encounter a burner which is airbound, and which though connected to an outside tank has no return line. It may be impossible to lift oil by running the fuel unit with its air-vent plug removed. Removing this plug lets air into the chamber under the piston (or bellows in some units) and the leak at port E lets this air travel path E-F-G-H, dropping the vacuum that should lift oil from the tank.

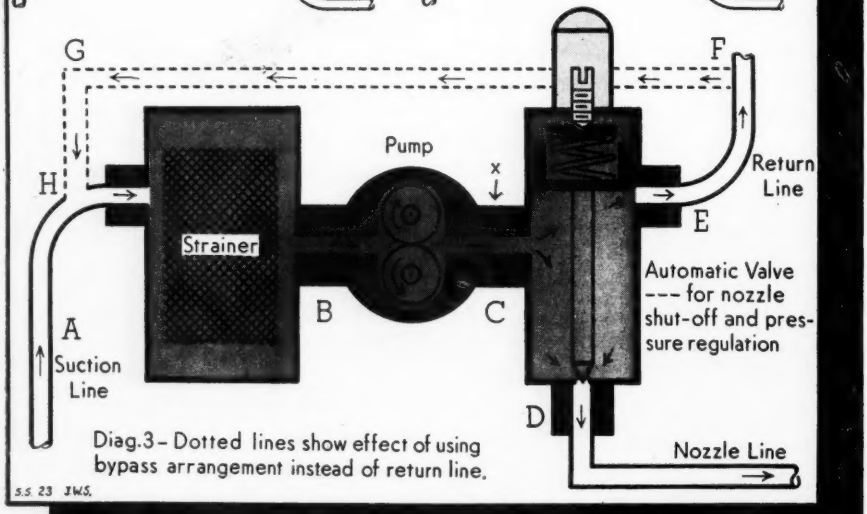
To start such a burner quickly, and thus lick the worst kind of air-binding, fit it with a temoprary return line, set it up for two-line operation, and air-rid it in the usual manner. Really, such a job needs a return line.

Diag.1 - Fuel unit with return line. By-pass of fuel unit is closed. Return line should be used if pump lifts oil.



Diag.2 - Fuel unit rigged for one-line operation. Bypass of fuel unit is open. Inside tank installations do not need return lines.



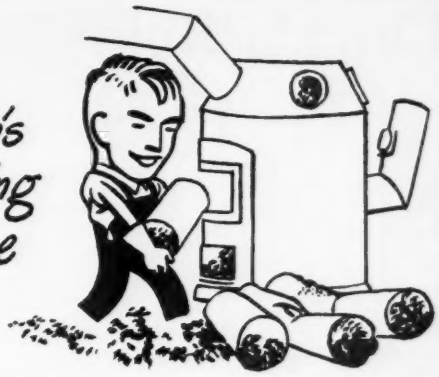


Diag.3 - Dotted lines show effect of using bypass arrangement instead of return line.

5.5 23 JWS.

This man was cold last winter

This man's remodeling his home



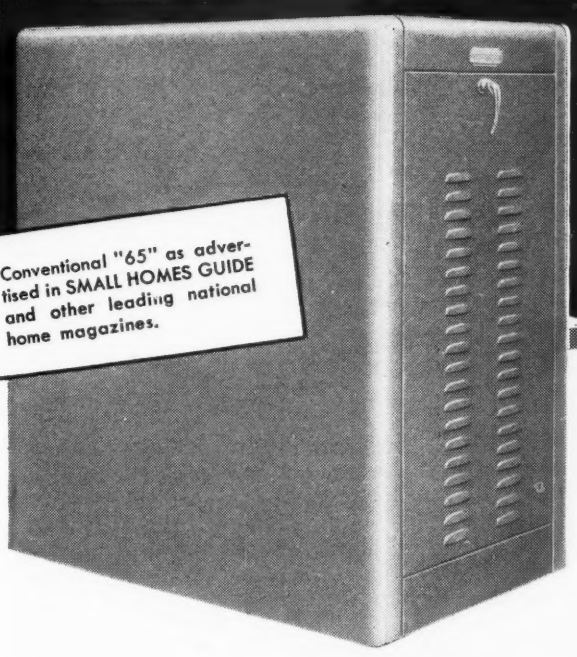
This man's building a new home

THEY'RE ALL CUSTOMERS RIGHT NOW

FOR

KO·Z·AIRE®

CONDITIONING UNITS



Conventional "65" as advertised in SMALL HOMES GUIDE and other leading national home magazines.

Other KO·Z·AIRE Conditioning Units available for heating needs to 350,000 BTU.

The field is wide open for fast sales . . . quick profits *NOW* with KO·Z·AIRE, the Conditioning Units that are *easy* to sell. Carefree, dependable winterlong warmth with clean, economical oil or gas firing and complete automatic control make KO·Z·AIRE the perfect conditioning unit for every home.

Dealers all over the country report the KO·Z·AIRE line has doubled and tripled their sales. Get busy *NOW*, turning your prospects into customers with KO·Z·AIRE.

MAIL THIS COUPON TODAY!

Jones & Brown, Inc.
439 Sixth Avenue
Pittsburgh 19, Pa.

Yes, I'm interested in quick profits with KO·Z·AIRE. Rush full information on choice territories still open.

NAME_____

ADDRESS_____

CITY_____ STATE_____

F

KO·Z·AIRE

Nationally Distributed by

JONES & BROWN, INC.

439 SIXTH AVENUE PITTSBURGH 19, PA.

Canada Refuses Natural Gas to Northwestern States

CONCERN OF Northwestern oilheating men over the arrival of Canadian natural gas was eased late in July when Canadian officials ruled that there would not be sufficient gas available in Alberta fields for export. Previous plans had called for Canadian gas to arrive in the cities of Washington and Oregon within the next three to five years, though provincial officials were battling to insure the gas for their cities before any was exported to the States. It appears now that the provinces will get the gas, though Canadian national officials are said to be anxious for the dollar exchange such an export would create.

Officials of British Columbia long have fought to get Alberta gas for Vancouver and Victoria before any extension of the line was authorized for Washington and Oregon. The logical path for such a line westward, however, would take it close to Spokane, and it was believed Spokane would get the gas first, then west to Seattle with lines north to British Columbia, and south to Portland.

An all-Canadian gas line would have to go west over the Canadian Rockies and would reach heights up to 10,000 feet, much of the way through solid rock. By coming into eastern Washington the heights of the Canadian Rockies would be avoided, and most of the way would be through the comparatively easy digging afforded by agricultural areas and desert.

Few gas utilities in the Northwest have adequate distributing systems for the demand that natural gas might create. Electricity has been so abundant until recently, and so low in cost that gas has little acceptance as a cooking or water heating fuel. Existing mains would have to be almost completely replaced and vastly extended to allow gas to compete successfully with oilheating, but utilities were anxious to solve these problems to build a load.

Dealers in Northwestern cities saw the possibility of their areas following Salt Lake City in gas acceptance. Oil, wood and coal are the principal heating fuels at present. Gas has very little acceptance as a domestic fuel for any purpose. Much this same condition existed in Salt Lake City until recently, but gas now has become a strong competitor for the heating market.

Gas from the Wyoming fields arrived in Salt Lake City about 20 years ago, mainly as an industrial fuel for the smelters. A short time ago the gas utility applied for permission to increase the industrial rate, and after study the Public Service Commission of Utah allowed the increase, but with the provision that domestic rates be drastically reduced.

The "Deseret News" of Salt Lake City recently published a consumer study in which is included data on home heating in the area. Fifty-five percent of homes are now gas heated, 38% coal heated and only 5% oilheated.

Domestic gas rates in Salt Lake City start at $1.00 for the first thousand feet per month; 80 cents for the second thousand; 60 cents for the third; 40 cents for the fourth and fifth, and 30 cents for all gas over 5,000 ft. per month. This is a straight natural gas of 1,000 Btu per cubic foot. Domestic heating oil is selling at 11 cents a gallon in Salt Lake City, though both Utco (Standard of Ind.) and Standard of California have refineries there. Crude is piped from the Rangley field in Colorado. Standard of California now has plans for piping products from Salt Lake refineries to the Columbia River for water shipment to the coast. Meanwhile, gas from Wyoming costs about a third as much as locally refined heating oil.

The present decision to keep Canadian gas for Canadian users meets with the wholehearted approval of most oilheating men in the Northwest. Heating oil prices at retail presently range from around 11 cents to a little more than 12 cents per gallon, and there is no indication that prices will be reduced in the near future. Dealers report that relatively high oil prices, coupled with rumors of coming natural gas have increased sales resistance this summer.

"Hide the pencil sharpener, paper clips, pen set, memo pads and rubber bands. Daddy's bringing his boss home for dinner!"

OHI Of N.E. Sets Up Uniform Fueloil Accounting System

A UNIFORM SYSTEM of accounts for fueloil distributors has been presented to its membership by the Oil Heat Institute of New England after a series of meetings and a study by a firm of certified public accountants. The purposes of the system, according to Fred N. Beckwith, executive secretary, are (1) to provide a simple formula for the classification of accounts which can be adopted by any fueloil distributor, and (2) through the use of a uniform method of presenting financial results of operations, to make possible comparisons between distributors or groups of distributors.

The system is divided into five main items of expense: Bulk plant, direct delivery expense, indirect delivery expense, selling expense, and general and administrative. Under each heading the items to be included are specified and explained. No attempt has been made to set up accounting for departments of the distributors' business other than fueloil. Cost of sales, installation or service on equipment is not included.

It is planned that distributors using the Uniform System of Accounts will report their costs from time to time, from which average costs for each department of the business can be calculated and distributed to the cooperating membership.

◈

Allison F. H. Scott, formerly with FHA in Washington and long active in the heating industry, has been appointed southwestern regional manager of the South Wind domestic heating equipment division, Stewart-Warner Corp., Chicago 14, Ill.

WHAT THIS NEW *Straight-Thread* BARREL FAUCET WILL DO FOR YOU

No. 253

★

Straight threads permit proper spout direction . . . eliminate forcing or jamming . . . mesh with flange threads for a perfect fit.

★

Hycar rubber flange gasket — recommended for fuels and lubricants — assures a snug, leak-proof connection.

★

Cast in red brass — ¾" I.P. only — complete with steel, easy-to-operate lock lever. A spring tension faucet.

PROPER DIRECTION WITH A LEAK-PROOF FIT

No Jamming . . . No Thread Disruption

At first glance the No. 253 Barrel Faucet appears ordinary. But look at the shank . . . the threads are *straight* — not tapered. This new feature offers these distinct advantages: (1) The straight-threaded shank matches the drum flange to permit proper direction of the spout *without* forcing the faucet. (2) Straight threads enable you to screw the faucet in place with ease . . . no danger of jamming or causing destructive thread disruption. (3) *All* shank threads mesh with flange threads for a perfect fit . . . usually only the two outside threads engage with tapered shank faucets.

Note, too, the Hycar rubber flange gasket. It is recommended for fuels and lubricants . . . is included to assure a snug, leak-proof connection. Your jobber has the No. 253 Barrel Faucet in stock . . . order your needs from him today!

ROCKFORD 18 90 BRASS WORKS

Plumbing Brass Goods Since 1890...

ROCKFORD BRASS WORKS • ROCKFORD, ILLINOIS

Readers Express Views on Brown-Connolly Article

(Edit. Note—In the August issue appeared an article, "Responsibility for Heating Oils" by Messrs. Brown and Connolly of the Standard Oil Co. (N.J.). Numerous letters were received commenting on their appraisal of the fueloil outlook with its problems. Pertinent paragraphs from several of them follow):

SOCONY-VACUUM OIL CO.
New York

I think all of us in the industry recognize that unless consumers and resellers proceed immediately to replenish their stocks in an orderly fashion, it may be that their pent-up demands will be so bunched in the third and fourth quarters of the year that serious embarrassment to the petroleum industry would result. In this part of the country it is not possible for primary storage to absorb the full burden of preparation for winter. I congratulate you on publishing this timely article. You are rendering the industry and the public a service.

A. L. NICKERSON
Director, Domestic Marketing

* * *

SUN OIL CO.
Philadelphia

This is a timely appraisal and warning. It is necessary that the industry be made aware of these conditions so that it will not be subject once again to the criticism arising from the stringent conditions of the 1947-48 season.

Only one statement in the paper troubled me. If you will refer to the section regarding greater seasonal variation evidenced in the postwar oil business, it does not seem clear what is meant by "higher summer inventories of burning oil." From our studies on the subject of inventory levels of the four major products, in terms of demand and expressed as days' supply, we find that for the period 1934-40, inclusive, inventories of distillate fueloil in Districts I, II and III represented slightly better than 97 days' supply on July 1. For the postwar period 1946 through 1948, inclusive, days' supply of distillate fuel in these three districts averaged slightly less than 58 in number, while on July 1, 1949 there were better than 112 days' supply of this product at primary reporting levels.

I am concerned with the statement that higher summer inventories of burning oils are necessary and desirable at primary levels of storage. It might have been a clearer statement explicitly to relate necessary inventory levels in terms of demand rather than approach the problem implicitly by in percentage changes in inventories. Your publication is to be congratulated for many steps in this direction which it has taken over the years.

BENEDICT SAURINO
Manager, Statistical Division

* * *

NATIONAL PETROLEUM COUNCIL
Washington

I concur substantially with the outlook that Brown and Connolly present and am glad you are giving this publicity. There is a very great need for a warning of this kind.

JAMES V. BROWN
Secretary-Treasurer

* * *

KENDALL REFINING CO.
Bradford, Pa.

Distribution of such information is very timely and should be of distinct help to all divisions of the heating industry. It should be given wide circulation, as I noticed an article in a recent issue of a prominent New York business paper which took a directly opposite view.

J. B. FISHER
President

* * *

CITIES SERVICE OIL CO.
Bartlesville, Oklahoma

Our employees following supply and demand advise me that this article will be quite helpful to them and of general interest to the industry.

A. W. AMBROSE
President

* * *

CONTINENTAL OIL CO
Denver

Courtney Brown and Jack Connolly have analyzed the situation very clearly and as you know I just about take their conclusions without any questions.

J. A. LENTZ
Western Sales Manager

* * *

LION OIL CO.
Eldorado, Ark.

This is a very thorough analysis of the heating oil situation, and your organization is performing a worthwhile service in making such information available.

A. F. REED
Vice-president

* * *

SHELL OIL CO.
New York

In general, I concur fully with the problems mentioned as certain to arise. As one who keeps in close touch with prospects, the chief deviations from the article are those of magnitude. Specific points of difference are:

1. It is felt that the 1949 kerosene demand will slightly exceed that of 1948 and that distillate demand will be about 5% higher.

2. Although not certain, it is felt that demand in September will step up sharply and allow for a larger increase in kerosene and distillate demand in the third quarter than shown.

3. Although the winter demand of 1949-50 will be dependent partly on weather, it is felt that the percentages shown in the fourth quarter for kerosene and distillate are on the high side and those for the first quarter of 1950 on the low side. However, for the winter season, six months, it is felt that demand will exceed last winter by up to 25% on the basis of normal weather.

4. With prevailing prices of gasoline and distillates and a continuation of high gasoline demand, the yields shown in the fourth quarter seem unlikely to prevail.

5. Refinery runs and crude production, it is felt, will have to be stepped up 100,000 barrels a day more than indicated.

Too much emphasis cannot be placed on the effect of price that will be caused by very heavy demands to meet actual

LOOKS . . . SELLS . . . and PERFORMS . . .

Like Magic!

THE New BURNHAM PACEMAKER

A SUPER-EFFICIENT SMALL-HOME BOILER FOR OIL-FIRING EXCLUSIVELY

Engineered to out-perform competition. Designed for easy handling and installation. And, even with all the "extras" the PACEMAKER provides, it is competitively priced.

PACEMAKER is not "just another new boiler." Our engineers and designers were given instructions to produce an oil-burning, *cast-iron* boiler "better than those now on the market."

And how they came through! Many features of the PACEMAKER are original with Burnham — features not found on other boilers. Exhaustive tests, too, have shown that these exclusive features make PACEMAKER the outstanding low-cost boiler on the market today.

Note these important points:

HIGH EFFICIENCY — *Two* crown sheets — not one — provide more prime heating surface. Enables PACEMAKER to literally scrub all the heat from the fuel. Vertical fire-travel, too — usually found only in more expensive boilers.

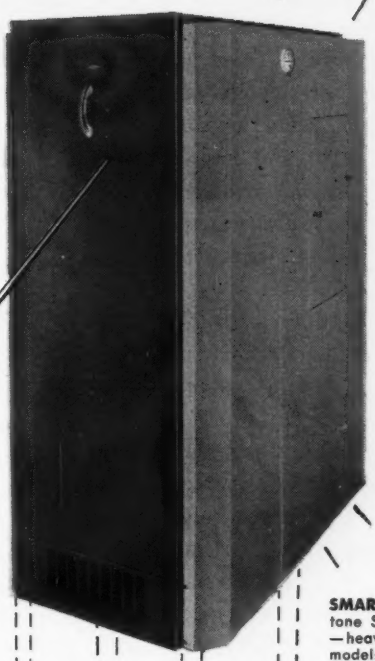
BOILER SHIPPED ASSEMBLED — A big cost saving item in these days of high labor.

PRE-CAST COMBUSTION CHAMBER — Insulation and refractory fitted and cemented in boiler base at factory — another labor saving feature.

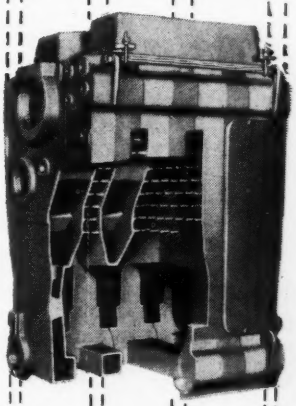
DOMESTIC HOT WATER — Specially designed to deliver *abundant* hot water, summer and winter, at low cost. Built-in all copper water heater — tankless or storage type.

CONTROLS — All controls, mounted in front of boiler *directly above oil-burner*, assure easy wiring.

GAS TIGHT CONSTRUCTION — All sections machine ground for tight fit — no air leakage or escape of oil fumes.

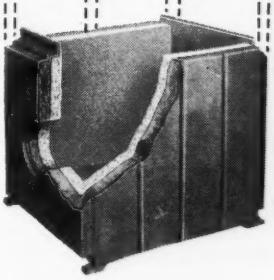


SMARTLY STYLED two-tone Sarasota Tan jacket — heavily insulated. TWO models: Flush Jacket conceals all controls. Extended Jacket *(illustrated)* conceals oil burner.



EASY TO INSTALL — Can be bolted to base while lying on its side. Easily raised to vertical position. *(Cutaway illustrations show construction).*

EXTRAS that save time on the job!



PRE-CAST COMBUSTION CHAMBER — Insulation and refractory fitted and cemented in boiler base at factory.

CONTROLS — Controls are directly above oil-burner, and mounted on front of boiler.

Get all the facts on PACEMAKER — the oil-burning boiler that simplifies installation and delivers what you promise.

Burnham Corporation

"PIONEERS OF RADIANT BASEBOARD HEATING"

IRVINGTON, N. Y., Dept. FO 99

BURNHAM CORPORATION
Irvington, New York — Dept. FO 99

Please send me literature on PACEMAKER.

Name _____

Address _____

City _____ State _____

winter consumption. It should be noted that primary refinery demands this year more closely coincide with actual consumption than in previous years and will show a sharp seasonal variation. This will of necessity result in wide price fluctuations since refineries cannot operate at such high and low levels of supply and meet the winter requirements. Accordingly, prices are presently depressed since refineries are following the normal course of helping to meet the winter demand by a summer build-up of secondary and primary storage.

The deferred buying and necessary winter consumption will probably greatly exceed the refinery winter out-turn unless drastic changes occur in yields and runs are substantially higher. To bring about both of these a substantial price change will be necessary. The present differential between gasoline and distillate of 4¢ per gallon at the Gulf certainly omens a minimum production of distillates.

J. H. SALMON
Economist

* * *

THE ATLANTIC REFINING CO.
Philadelphia

The Brown-Connolly article is timely and very informative. It should point out that better times are ahead for the industry if it now puts its house in order.

E. T. KNIGHT
Economist

* * *

OIL-HEAT INSTITUTE OF AMERICA
New York

I do not have the facts at my disposal as these men have but my own observations have led me to feel for some time that we could have very serious difficulties during the coming winter if we should have a cold one. This would be particularly true if our fall should be mild so that we do not get a normal rush of fall business.

Too many individual distributors are taking the position that the situation is not serious, or what is worse, are taking the position that if they refuse to comply with any program to get their customers to fill their tanks and also to fill their own tanks, that they will force the price of products down further. While it would be desirable to have lower prices, I think that at this particular time it is a shortsighted policy.

In my opinion you have served the industry by publishing this article, and I only hope that everyone can work together to avoid the trend in the inventory position of middle distillates as indicated in this article.

C. R. JONSWOLD
Chairman, Business Management Comm.

* * *

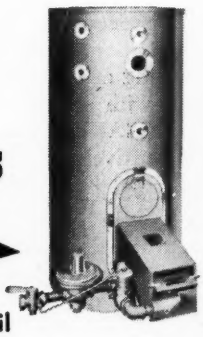
GULF OIL CORP.
Pittsburgh

The article is excellent and badly needed at this time. Fueloil jobbers and dealers who do not fill their own storage and the storage of their customers during the summer months are doing the public and the industry a disservice. Perhaps if enough people keep banging away, the job can be done before it is too late.

A. C. STAPF
Asst. Gen. Mgr., Fueloil Sales

* * *

See How the Complete ALDRICH Line Meets Customer Requirements . . . Clinches Sales!



Convert from oil to gas, gas to oil with identical boiler ratings.

domestic heating. It's one of many exclusive features that help you sell.

●With Aldrich you meet your customer's exact needs for hot water or steam heat and/or hot water supply. Offer seven sizes of beautifully designed and built boiler-burner units—the 100,000 BTU "Bantam"; six Series "B" Heat-Pak units, rated 118,000 to 808,000 BTU.

The oil-to-gas conversion feature of the Series "B" keeps your inventory down and it's a BIG sales clincher in localities where gas may be available later for

ALDRICH Oil Burners

Skillfully engineered, precision-built for economy and trouble-free service. No radio interference from Aldrich-built motors and transformers. Burners flange or base mounted. Model CX: .75 to 2 GPH. Model SAX (shown) with interchangeable draft tubes and air cones: .75 to 4.50 GPH. Model BX: 4 to 8.50 GPH. Model JU Heavy Duty: 7 to 19 GPH.

The Popular New ALDRICH 'Bantam'

. . . for modern, low-cost homes

This outstanding boiler-burner unit, designed especially for the modern 4 to 5 room home, stands only 45" high, occupies 20"x33" of floor space. It can be adapted to steam, hot water, or radiant heating systems, and provides domestic hot water in excess of FHA requirements. Models also available for hot water supply only.

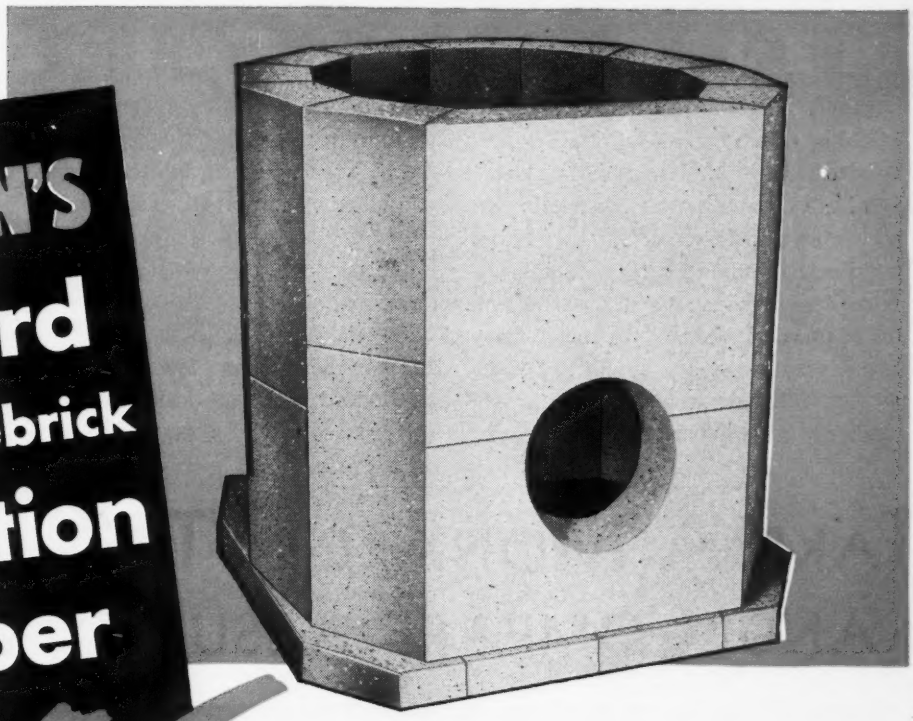
JOBBERS—You'll make more money with Aldrich—write for facts.
DEALERS—Write or wire for name of nearest jobber.

ALDRICH

ALDRICH HEAT-PAK PRODUCTS

ALDRICH COMPANY
a subsidiary of Breeze Corporations, Inc.
103 E. Williams St., Wyoming, Ill.
ONE OF THE BREEZE MARK PRODUCTS

A. P. GREEN'S Standard Insulating Firebrick Combustion Chamber



Each piece of the chamber is packaged in an individual cell to insure safe, unbroken arrival.

There's An A. P. Green Combustion Chamber to Meet Every Oil Burner Requirement

Streamlined Combustion Chamber: Rectangular heavy firebrick chamber. Comes in all sizes.

Perfecto Combustion Chamber: Economical. A heavy firebrick chamber of circular design. Also available in all sizes.

A. P. Green REFRACTORY PRODUCTS

Saves Installation Time—Insures Customer Satisfaction On Low Gallonage, Short On-Off Firing Cycle Burners

The new A. P. Green IFB* Combustion Chamber has been designed for ease of installation, exceptionally fast heating and complete combustion. It comes to you in a special cardboard container consisting of two inner cartons containing *all* the component parts, including a 5-lb. can of high temperature Mortar. Everything you need for a customer-satisfying installation is included. The front tile is in 2 pieces with the burner opening already cut. You don't have to perform this delicate, time-consuming operation on the job.

This A. P. Green IFB* Combustion Chamber has been specially designed to meet the exacting requirements of small gallon-per-hour ranges where there is a short on-off firing cycle. It is available in four standard sizes — 1.00, 1.35, 1.50 and 2.00 gallon-per-hour capacities.

An A. P. Green distributor located near you will give prompt delivery and personal attention. You'll find him listed in the yellow pages of your telephone directory, or write direct for more information.

**Insulating Firebrick*

A. P. GREEN FIRE BRICK COMPANY

MEXICO, MISSOURI, U. S. A.

A. P. GREEN FIRE BRICK CO., LTD. IN CANADA

DISTRIBUTORS IN THE PRINCIPAL CITIES OF THE WORLD

SOCONY-VACUUM OIL CO.
New York

The general theme of the Brown-Connolly article is just about what we would be thinking, and I would further say that this information should be given as wide a distribution as possible in the petroleum industry. What I have in mind is that very recently a prominent New York newspaper had an article in the financial section that the fueloil market is very weak and might get even weaker. That kind of thought is exceedingly troublesome and could cause a complete disregard of the points which this article sets out.

The thing still not clear to me in this whole picture is the secondary storage situation; it is utterly confused. Your recent "Trends" article indicated what I would say was a normal seasonal build-up which wasn't anywhere near as much as last year for the comparable three months, but last year was very high. When we look at the calculated refinery deliveries they are very low and I would have looked for your dealer figures to show no increase. I cannot explain to my satisfaction how the calculated industry demand for the last three months could have gotten so low. Some of it may have been material carried over from the previous year, but even if you allow for what seems to be a reasonable guess on the carry-over quantity you cannot calculate as low a demand as came out in the figures.

I hope that these low figures do indicate deferred demand which will be picked up later some way or other. In talking around, I can't seem to find the answer for the indicated decreased demands for oil because of a delay on the part of the consumer, as they are mostly on automatic deliveries.

ALBERT J. MCINTOSH
Economist

* * *

AMERICAN PETROLEUM INSTITUTE
New York

I am not sure that I share all of the views expressed in the paper, but it is nevertheless a very timely one. I do have in mind, however, that often a mild winter followed by a hot summer produces an early following fall and a rather severe winter. Forecasting weather is a thankless job that I wouldn't attempt, but these things do come to mind.

FRED VAN COVERN

* * *

TIDE WATER ASSOCIATED OIL CO.
New York

We are in entire agreement with the thoughts and data given in the Brown-Connolly article and you are to be complimented in bringing this situation to the attention of the petroleum industry. It should clear up some confusion that exists today.

We have always been interested in also reading the articles and data which you have presented in the past on the status of the stocks in secondary and consumer storage.

OLIVER S. AMBROSE

* * *

THE OHIO OIL CO.
Findlay, Ohio

My own calculations have indicated similar conclusions to those of Dr. Brown, although the degree of my estimates of demand increases are somewhat lower. I believe the actual yield of middle distillates may be a couple of percentage points less than he anticipates.

This article is particularly well timed

TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

Most any nozzle will produce some kind of a fire, but —until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really can be. Advise make of burner and sketch or accurately describe air mixing head and make test *yourself* with the series Monarch Nozzles we recommend.

Pulsation: Write for new Circular No. 51849 on our "Anti-Pulsation" equipment.

F-80

The G-74 Combustion Head

The Monarch G-74 Head embodies an entirely new approach to efficient means for intimately mixing air with atomized oil to provide a highly efficient controlled flame.

Note these features:

1. Suitable for capacity sizes from .75 GPH to 2.50 GPH.
2. Simple to install and has no external "adjustments" to juggle and there is no "guess work" about the settings.
3. Price—Less than the cost of a goodfuel unit.

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode. Rugged Brass bodies, with stainless steel pistons.

Write for Catalog D

MONARCH MFG. WORKS, INC.
2503 E. ONTARIO ST.
PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Rue de la Scie No. 16, Geneva, Switzerland

THE FITZGIBBONS BOILER

REG. U.S. PAT. OFF.

Eye Appeal

***The* "400" SERIES**

with the beautiful two-toned silver and green jacket. Beneath—a heat conserving, fuel saving blanket of "Fiberglas" thoroughly insulates the steel boiler against heat loss.

STREAMLINED · MODERN
COLORFUL · ATTRACTIVE

This is the new enclosing insulating jacket styled for the 10th anniversary year of the famous Fitzgibbons "400" Series steel boiler. It has eye appeal that attracts the women, teamed with boiler design that pleases the man. Both combine to provide the "sales appeal" which makes the "400" Series the choice of all leading Oil Burner Dealers.

Now you can sell "new looks" with the same dependable performance and abundant hot water supply that have been "400" Series qualities for a decade.

MEMBER

STEEL BOILER INSTITUTE · SBI · HEATING · PROCESS · POWER

Reg. U.S. Pat. Off

MOST ECONOMICAL IN FUEL · 1880 · THE FITZGIBBONS BOILER

Fitzgibbons Boiler Company, Inc. F.O.-SEPT.

101 PARK AVENUE, NEW YORK 17, N. Y.

Send me the new "400" Series Catalog.

Name: ..... Position: .....

Address: .....

City: ..... Zone: ..... State: .....

fueloil & oil heat

and should serve to bring about a better understanding of the basic factors of the industry. The publishers and authors are to be commended for their service.

N. G. DUMBROS

* * *

Milford, N. J.

I was impressed by Messrs. Brown and Connolly's somewhat fidgety analysis of probable troubles in burning oil shortages, come next winter.

As I understand this article, they say in pages of words and tables that if the oil producers, refiners, transporters and distributors get oversure about the fueloil supply situation, and the coming winter is worse than average, the users may be short of burning oils. Prices mays also get too high and the users get really sore.

Years ago when I tried to learn elementary economics I was taught that one of the many axioms of the subject was: "A shortage which is anticipated never occurs." If that still stands as an axiom in our post-1932 revised and enlarged economics, Messrs. Brown and Connolly have done a service in sending up storm warning signals.

Do I understand correctly that their proposed remedy is a prayer that we recognize that "great seasonal variation has come into the postwar oil business"? I'll do that gladly, in fact, did it five or six years ago.

And I'm all for the industry building adequate storage facility, but I wonder if we can build them in time to keep the people warm next winter, if we have a spell of hard frost.

Most of us ex-truck drivers and unlicensed plumbers who have nursed oilburners and fueloil deliveries through 20 or 30 winters will give three rousing cheers for anything that helps the industry — oil and oilburner — make it practically impossible for the user to get sore about oil deliveries, or prices, burner efficiency or service. And we'll work like hell for it too, just as we always have.

We like the business and want to see it do well, and hope Messrs. Brown and Connolly will see that Standard Oil (N.J.) leads the field in building new storage.

LLOYD BARKER

There's a market for SPARK oil heaters NOW! Installation *right now* has special advantages to you and your customers...avoids last minute rush and delays; makes winter comfort certain.

SPARK HAS NEW MODELS— NEW, LOW PRICES.

Write for details

SPARK OIL BURNING HEATERS

A product of
SPARK STOVE CO., INC.
OAKLAND 1, CALIF.

SPARK Stove Co., Inc.
2619 E. 12th St., Oakland 1, Calif.

Gentlemen: Please send me complete information on SPARK oil burning heaters and your SPARK dealer plan.

Name_____

Firm_____

Address_____

City_____ ***State***_____

Three Eastern Cities Get Natural Gas OK

FEDERAL POWER COMMISSION has authorized the Atlantic Seaboard Corporation to build facilities not later than May 1, 1950, to supply natural gas to the Consolidated Gas Electric Light and Power Co. of Baltimore. It is believed this gas will be sold as a straight natural gas rather than as a mixed gas. The commission at the same time failed to act on a request by Richmond, Va., that it be allocated natural gas by the Virginia Gas Transmission Corp., a subsidiary of Seaboard.

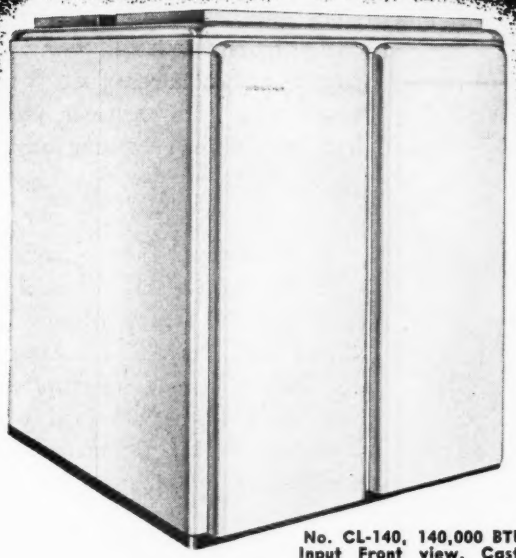
Natural gas also has been authorized and facilities are being completed for Staten Island (Richmond County, N. Y.), where a straight natural gas will be distributed. The territory is just beyond the end of the "Inch" lines in New Jersey, and will be the first natural gas to enter New York City.

Tennessee Gas Transmission Company has received authorization to extend its system to Buffalo, N. Y., to increase capacity about 28%. At the same time the Power Commission denied "without prejudice" a Tennessee application for authorization to extend its gas pipeline system to Boston.

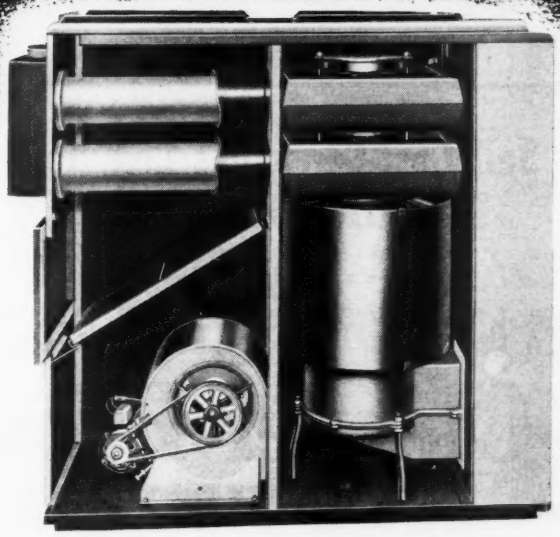
!!! EXTRA CAPACITY !!!

NOW—Up to 200,000 B.T.U. with MONCRIEF'S *New* CAST IRON...GAS FIRED

Air Conditioning Units



No. CL-140, 140,000 BTU Input Front view. Cast Iron Heating Element.



No. CL-200 Unit, 200,000 BTU Input Side Interior view, Cast Iron Heating Element.

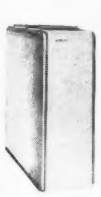
Here's that extra capacity to get those large, gas fired heating jobs for which the buyer wants a unit with a *cast iron* heating element.

With the introduction of these larger units, Moncrief can now supply Cast Iron, Gas Fired heating plants with inputs as low as 50,000 BTU and with inputs as high as 200,000 BTU.

Basement Air Conditioning Units, Utility Units and Gravity Furnaces, this series of modern units contains the type and size for every prospective purchaser who demands a heating element of cast iron. And the Moncrief is not just another cast iron furnace to cash in on the present rush for gas fired heating equipment. More than a half century of experience has endowed these "Years Ahead" heating plants with such modern engineering advantages as a round combustion chamber; horizontal joints, that are gas-tight without cement, where radiators join combustion chambers; readily accessible cleanout ports that meet all requirements; and finally a cabinet so ingeniously constructed that the entire heating element can be removed in a matter of minutes without touching ducts or plenum chambers.

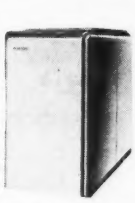
Cast Iron, Gas Fired Units are only one member of the large family of Moncrief "Years Ahead" heating products. Coal Fired, Gun, Oil Fired, Vaporizing, Oil Fired, Gas Fired—steel or cast iron heating elements—gravity furnaces, air conditioning units, Hiboy units, Counterflow units with air discharge at base of cabinet—Moncrief makes them all.

Send in for catalogs and the name of the Moncrief jobber who can place you in a position to increase your sales and profits.

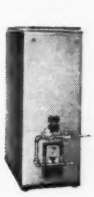


Series L
Gas-Fired Steel Air Conditioning Unit

Series U
Gas-Fired, Steel Utility Air Conditioning Unit



Series P
Gun, Oil Fired, Steel, Air Conditioning Units; Made also in Hiboy and Gravity Furnace Models. Convertible to Gas.

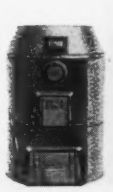


Series W
Gas-Fired, Steel Gravity Furnace

Series V
Vaporizing Oil-Fired, Steel, Air Conditioning Units, made also in Hiboy and Gravity Furnace models. Convertible to Gas.

Series AC-700F
Coal-Fired, Steel Air Conditioning Unit

Series 700
Coal-Fired, Steel, Gravity Furnace; also available with Round Casing.



Series C
Coal-Fired, Cast Iron Gravity Furnace; also available with square casing, and in pipeless models.

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

Iowa Farm Furnaces Are 38% Oilfired

IN A STUDY by the *Iowa Bureau Farmer,* a Des Moines publication, it is disclosed that among all Iowa farm homes having central heating plants 38% use oil as fuel, 55% use coal and 7% use gas. Brand preferences for oilburners as stated by the farmers interviewed were as follows in order of preference: Timken, Lennox, Oil-O-Matic, Laco, Century, Delco, G-E, Iron Fireman, International, Green Colonial, and various others. Of the top ten, four are native Iowa products . . . Lennox, Laco, Century and Green Colonial.

◈

Karl Egeler has been appointed sales manager, Duo-Therm Div., Motor Wheel Corp., Lansing, Mich., and has been succeeded as advertising manager by *Louis C. Vandertill.* Mr. Egeler joined Duo-Therm as advertising manager in 1932 and in 1940 added the duties of sales promotion manager. In this position he engaged in extensive field work with Duo-Therm distributors and dealers. Mr. Vandertill, with the company since September of last year as assistant advertising manager, previously had been with a Lansing advertising agency.

"Do you have one that travels faster than time? This one should get there yesterday!"

R. E. Bryant has been named manager, Automotive and Electrical Branch at Buffalo, N. Y., for Wagner Electric Corp., St. Louis 14, Mo. After intensive factory training, interrupted by the war years when he served with the armed forces, Mr. Bryant worked as a salesman in the company's Pittsburgh branch office.

W. J. Duncan, manager of the Green Bay, Wis., sales field for Standard Oil Company (Indiana), Chicago 80, Ill., retired on company annuity on August 5 after thirty-three years' service. He was succeeded by *A. V. Fraser,* whose position as manager of the reseller sales department in the general offices at Chicago has been taken over by *G. D. Carroll,* formerly assistant manager at Kansas City, Mo. *F. W. Roos,* Peoria, Ill., sales manager has succeeded Mr. Carroll.

R. H. Bacon, vice president, Industrial Advertising Agency of Kreicker & Meloan, Inc., Chicago and president, R. H. Bacon & Co., business paper editorial service, has been elected president, Chicago Technical Societies Council. The Council is made up of some fifty scientific, engineering and technological societies, representing about 18,000 members. Mr. Bacon has been active in engineering society work in Chicago for the past twenty-five years and has been chairman of the Chicago section, ASME and president, Chicago Engineers Club.

Sell Cost-Conscious Commercial and Industrial Oil Burner Users... ...Show Them How

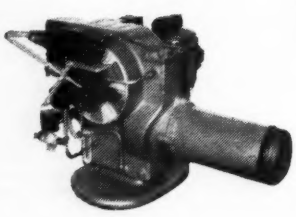
To Cut Costs With An Economically Operating

Cleaver-Brooks
HEV-E-OIL BURNER
USING LOW-COST No. 5 OIL

Quick sales and profits are yours when you offer your customers and prospects a chance to cut operating costs using low-cost, high heat value No. 5 fuel oil.

The economically operating Cleaver-Brooks HEV-E-OIL BURNER efficiently using low-cost No. 5 oil, assures substantial savings to hundreds of commercial and industrial oil-burner users in stores, factories, green houses, apartments, small laundries, cleaners, dyers, pressers, and processing establishments of all kinds.

Write today—for complete dealer and distributor information. Cleaver-Brooks Company, 363 E. Keefe Ave., Milwaukee 12, Wis.



CLEAVER-BROOKS HEV-E-OIL BURNER FEATURES

LOW PRESSURE AIR ATOMIZATION
AUTOMATIC ELECTRIC IGNITION
LOW FIRE START • FLAME MODULATION
RESPONSE TO LOAD REQUIREMENTS
SIZES: 1 TO 40 G.P.H.

a complete new line

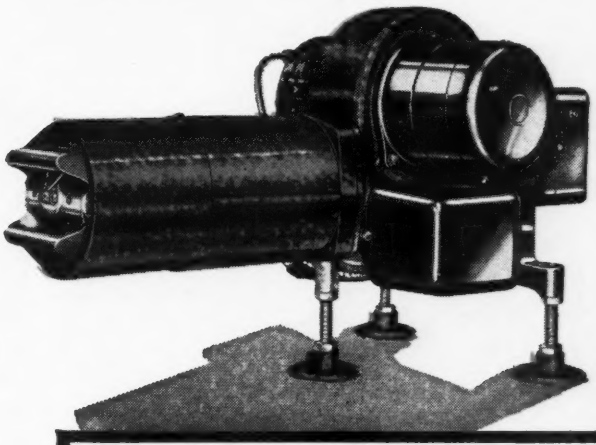
modern HEATING EQUIPMENT!

The Latest in Advanced Engineering

Backed by Gilbarco's Unequaled Manufacturing Experience

WORLD-FAMOUS GILBARCO OIL BURNERS

All GILBARCO OIL BURNERS have the exclusive *Economy Clutch* — the patented action that reduces the formation of soot when the burner starts and stops. Greater fuel savings, cleaner heat, quieter operation!

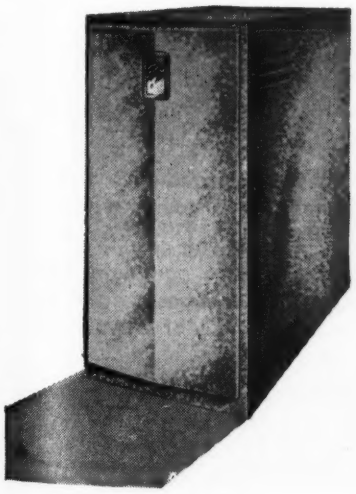


NEW GILBARCO GCN OIL BURNER—

For the volume market. Trim, modern hood protects burner and adds to customer eye appeal.

Easy installation — easy cleaning and adjustment, as operating parts are exposed when hood is removed.

Gilbarco Oil Burners for larger homes and commercial installations come in four sizes from 2 to 25 gallons per hour capacity.



And for apartments, factories and other large buildings a complete line of industrial oil burners up to 110 gallons per hour capacity.

MODERN, COMPACT BOILER-BURNER UNITS —Both steel (packaged) units and cast iron models for easy installation, attractive appearance! Economical heating for hot water or steam . . . with built-in tankless heater for hot water supply.

THE OIL BURNER WITH THE ECONOMY CLUTCH

Gilbert & Barker Manufacturing Co.
W. Springfield, Mass., & Toronto, Can.

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 18th.

Upper Midwest Association Holds First Convention

AFTER AN EXISTENCE of only seven months since its inception, the Upper Midwest Oil Burner Assn., held a two day convention at Hotel Nicollet, Minneapolis, on July 24 and 25, with about 300 oilheating men attending from four states. The general results were so satisfactory that a second convention has already been booked for approximately the same dates next year.

In addition to five speakers the sessions included an opening address by Mayor Hoyer of Minneapolis and an open forum meeting in which quite a few of the members participated. The speakers and their topics were: K. H. Burner, Chase Brass & Copper Co., on "Radiant Panel Heating"; W. A. Sullivan, Jr., Shell Oil Co., New York, on "Means of Improving Oil Heat Efficiency"; Lon Casler, public relations counsel of the Oil Heat Institute of America, on "Public Relations for Oilheating"; Robert Gray, FUELOIL & OIL HEAT, New York, on "Competing With Natural Gas" (reproduced in the August Issue); and E. J. Gallmeyer, vice-president, Wayne Pump Co., Ft. Wayne, Ind., on "The Land Is Fat."

Association officers elected at the Convention were B. L. Gage, president, Fred Meyer, vice-president, R. H. Lee, treasurer and H. F. Horning, secretary.

Horning had a clever device to get all of the members and visitors into all of the manufacturers' display booths, 29 of them, grouped about the mezzanine floor. On registration, each person was given a card listing the exhibits and having numbered boxes around the edge, each number corresponding to a booth. As the booth was visited the card was punched by the exhibitor. When all numbers had been punched the card was signed and turned in for a prize drawing at the close of the convention . . . prizes were cash and merchandise.

An important step taken at the meeting was the adoption of a "Code of Ethical Standards." They are described as containing nothing that all reputable companies are not now doing, but publication and dissemination of the code is intended to acquaint the consumer with the fact that members of the Association are abiding by a voluntarily adopted standard. After each installation or service call members will give the customer a certificate to explain this and will display stickers or decalcomanias on their trucks and office windows to identify themselves as members of the Association.

The code, drawn up largely by President B. L. Gage, with suggestions and assistance from others, reads as follows:

Holding it to be the duty of everyone engaged in the oil heating industry to cooperate in every effort to build up the industry and make it of the greatest possible service to the American public, we members of the Upper Midwest Oil Burner Association pledge ourselves to this code of good business practices:

1. To use only high grade materials and to seek by every means to achieve

NOW! Make Slow Fills . . . FAST FILLS

WITH FASFILL . . . the quick fill pipe connection! Just a turn of the wrist and FASFILL is in place. Make it up hand tight only. Build-ups are unnecessary . . . worn fill pipe threads make no difference. With FASFILL you have *any* needed connection in a jiffy! Long-wearing gaskets at all bearing points prevent oil seepage. FASFILL eliminates blowbacks and fill drip . . .

Shove The Gun Home and Let 'er Go!

There's a synthetic rubber diaphragm in the FASFILL head—just shove the gun through this diaphragm and forget about blowbacks. FASFILL is designed to hold the gun in correct position. Save time, save money . . . with FASFILL!

WHEN ORDERING be sure and give us the OUTSIDE measurement across your gun nozzle.

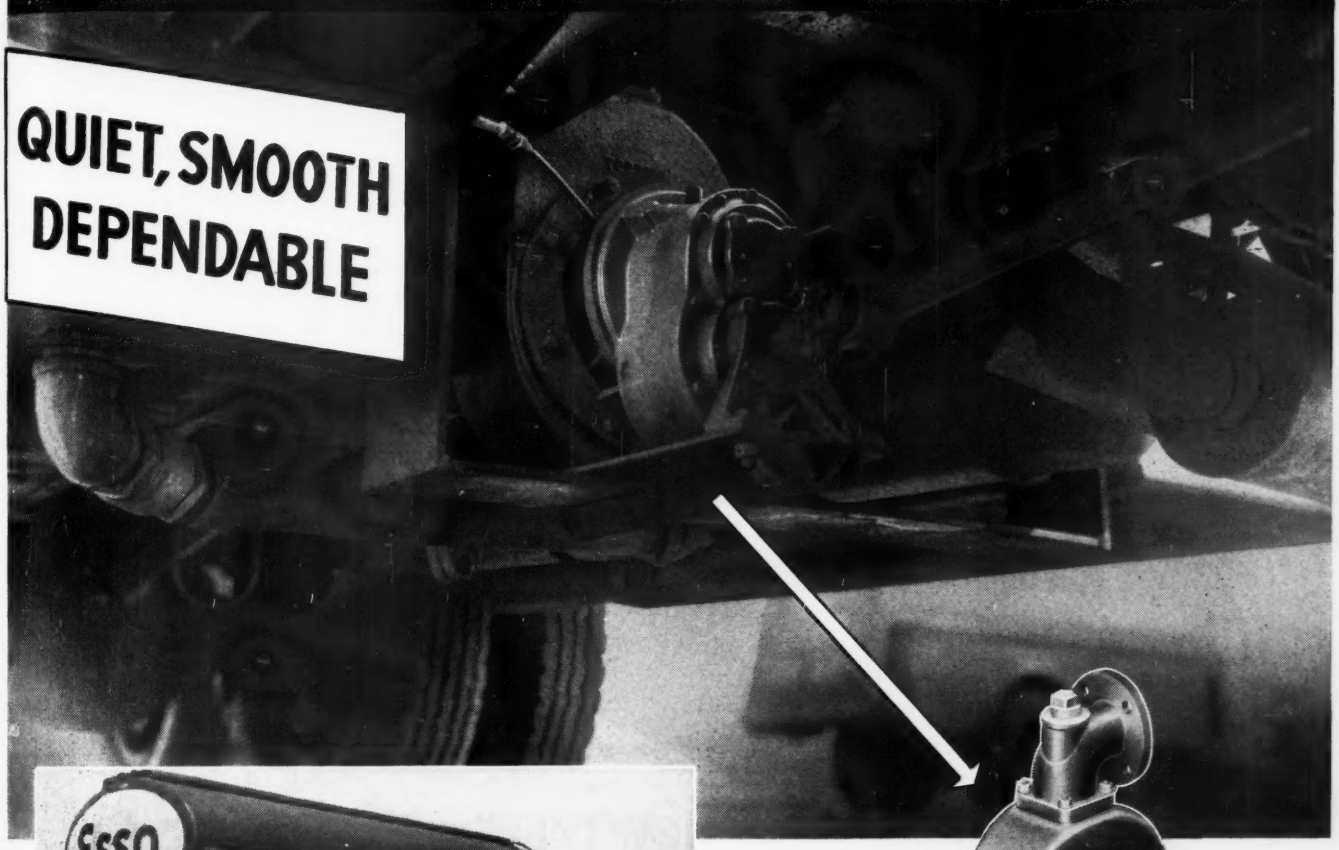
In one SMALL convenient carrying box (weighs only few pounds complete) you can have ALL the connections needed for making up to 1¼", 1½", or 2" male or female fill pipe.

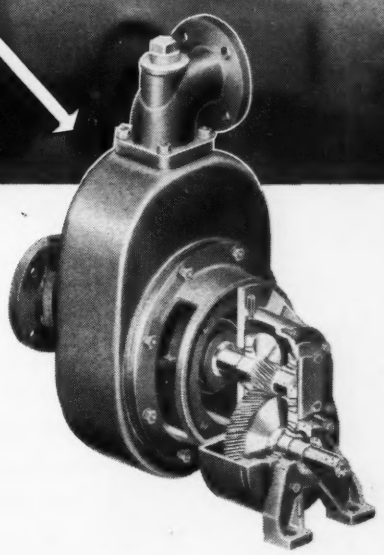
$13.50 F.O.B. FACTORY

SCULLY SIGNAL CO.
76 First Street
Cambridge 41, Mass.

TO MAKE A QUICK OIL FILL PIPE CONNECTION USE . . . FASFILL

NOW — a MARLOW Self-Priming Centrifugal power take-off tank truck pump!





For the first time, truck engine idling speed is converted to the smooth, quiet, high capacity *self-priming centrifugal* operation so long sought in a pump by major and independent petroleum handlers.

As in the Esso tank truck installation shown, a specially designed, built-in gear increaser permits direct coupling to the power take-off. Pumping is fast yet *extremely quiet.*

Marlow's free-flow design and exclusive "diffuser" priming method enable this new Marlow to prime and purge itself automatically. It doesn't vapor lock. It has no auxiliary priming devices . . . nothing to get out of order. It can pump one compartment after another without attention.

And since the pump does not depend on close tolerances or sliding surfaces, a longer, trouble-free life is assured. Furthermore, the self-compensating shaft seal — a Marlow exclusive — provides a safe, drip-proof seal.

Note the simple construction of the gear increaser. It is this compact specially made helical gear unit that helps keep the operation virtually noiseless — and the flow as steady as Niagara.

This efficient, ruggedly constructed pump, complete with gears, is made in 2- and 3-inch sizes, capacities from 20 to 200 GPM, high and low pressure, flanged or threaded connections.

For more details about the full Marlow line of pumps for handling petroleum products, including this new Type G power take-off pump, write for the new bulletin, "Petroleum Product Pumps."

MARLOW PUMPS • RIDGEWOOD, N. J.

high efficiency performance from each and every installation.

2. To employ, at an adequate wage, workers of character and dependability, and to provide conditions favorable to their welfare, encouragement and development.

3. To keep properly informed concerning new developments within the industry and to conform all installations of equipment with the local codes or the installation standards as set up by the Oil Heat Institute of America.

4. To avoid any exaggeration or misrepresentation in word or inference so that customers will never be led to expect more in performance or service than is actually delivered.

5. To adjust promptly any cause of dissatisfaction and to endeavor to make every purchaser a satisfied customer.

6. To compete always with fairness, securing patronage on merit and without derogatory reference to a competitor or his equipment.

7. To interest himself in the public welfare in behalf of which he will be ready to apply his special knowledge, skill and training for the use and benefit of mankind.

8. To maintain the highest standards of ethical and moral practices throughout the conduct of business in order to achieve customer satisfaction and to reflect credit on the association and the industry.

New Brown Cover Makes Hose Last Longer!
RESISTS EXTERNAL WEAR AND ABUSE... PROTECTS CARCASS
"NEWTYPE"
FUEL OIL HOSE
The tougher, longer-wearing brown cover with which "Newtype" is now furnished gives this hose everything it takes to make fueloil deliveries cost less. The other well-known features still pay off . . . non-flattening, kinkproof construction; non-swelling, oil-proof tube; a full, fast flow that means quicker deliveries; lightness in weight and extreme flexibility, for easier handling. Contact our nearest branch for prices, or send for new illustrated folder.
DANGER
GOODALL RUBBER COMPANY
GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.
Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
San Francisco • Seattle • Salt Lake City • Denver • Houston • Distributors in Other Principal Cities
Est. 1870

Oil Heat Old-Timers Install New Officers

OFFICERS and directors for 1949-50 were named recently by the Oil Heat Old-Timers, Inc., Long Island City 1, N. Y. Succeeding Anthony J. Sbare as president is James T. Watters, with Earle E. Bonn elected vice president and Herb Helman, secretary. Other appointments saw Carl Lieblich named treasurer, J. T. Mitidiere, assistant secretary and Hugh M. Stephenson, sergeant-at-arms.

Along with the above-named officers, elected or renamed to the Board of Directors were: E. B. Lipsett, Meredith F. King, Gus Burrell, L. G. Brown, Russell A. Dempsey, William O. Niccolls, Albin Herman Koenig.

Issue New Edition of I-B-R Ratings for Boilers

AVAILABLE from the Institute of Boiler and Radiator Manufacturers, New York 17, N. Y., is a new edition of "I-B-R Ratings for Cast Iron Boilers." The booklet contains I-B-R ratings for low pressure, cast iron boilers currently being sold by eighteen manufacturers. The ratings result from tests made in accordance with the provisions of the Institute's testing and rating code.

Boiler rating booklets are priced at 50¢ each. Other publications available from the Institute include four installation guides, the testing code and two calculation sheets for use with the guides.

Plumbing and Heating Bureau Schedules Annual Meeting

THE ANNUAL MEETING of the Plumbing and Heating Industries Bureau, Chicago 1, Ill., will be held on October 4 at the Palmer House, Chicago. The agenda at the afternoon meeting will include reports on the activities of the Bureau as the national public relations agency for the plumbing and heating industries, and election of directors and officers.

WEST FAST

FROM CHICAGO

Those Who Know Choose SILENT GLOW OIL BURNERS

FROM HARTFORD

Those Who Know Choose SILENT GLOW OIL BURNERS

"INVADER" OIL BURNER BOOSTS SALES FROM COAST TO COAST

IN CHICAGO . . . IN HARTFORD
A COMPLETE WAREHOUSE STOCK OF BURNERS AND PARTS . . . FOR NATION-WIDE SALES AND SERVICE FROM FACTORY-TRAINED MEN!

Yes, dealers served by both our Chicago and Hartford offices report that — thanks to INVADER, the new Silent Glow popular priced burner — sales have increased as much as 24 times! Here's a business-building opportunity you can't afford to miss. Better get the facts today why INVADER is easiest to service . . . to sell . . . to buy!

BUILT TO COMMERCIAL STANDARD CS-75-42 SPECIFICATIONS

- Westinghouse Motor, long-hour duty type, with manual reset overload protector.
- Choice of M-H, Prefex or other standard controls.
- Webster Fuel Unit, internal gear type.
- Torrington sirocco type fan.
- Burns 100% catalytic-cracked oil efficiently, cleanly, QUIETLY.

2 Standard Capacities:
Offered in two standard capacities: small, 1.00 to 1.65 G. P. H. and large, 2.00 to 3.00 G. P. H. A size to meet every normal home heating requirement.

WHY WAIT!
Get all the details NOW

MONEY BACK GUARANTEE

"**YOUR MONEY BACK** if this isn't the greatest oil burner value you've ever seen!"

Ross Sherman
President

This guarantee is backed by the A-A1 rating and reputation of The Silent Glow Oil Burner Corp., a pioneer and leading manufacturer in the oil heating field, with a quarter century background of experience.

To: THE SILENT GLOW OIL BURNER CORP.
850 Windsor St., Hartford 5, Conn. • 1500 So. Western Ave., Chicago 8, Illinois

Send us the complete story about "Invader" including prices and your money-back guarantee.

Name_____

Company_____

Street_____

City_____ State_____

8SL49

President E. J. Gossett, Bell & Gossett Co., Morton Grove, Ill., has issued an invitation to all members of the plumbing and heating industries to attend the meeting. President Gossett also named a nominating committee to consist of: A. B. Martin, Chicago manager, Kewanee Boiler Corp., chairman; Arnold H. Goelz, president, Kroeschell Eng. Co., Chicago and George E. Hoffman, manager, plumbing dept., Crane Co.

Manual Tells Oil Companies How To Arrange Open House

A MANUAL containing directions and procedure for holding open house has been prepared for oil companies by the Oil Industry Information Committee, New York 19, N. Y. "Holding Open House" contains 20 pages and cover. It is expected to be particularly useful for companies during Oil Progress Week, October 16-22, although it tells how to conduct an oil company open house at any time.

Suggestions are made as to the groups who might be invited to attend, with an explanation of the activities that a company holding open house might wish to undertake. Other information covers the steps in organizing an open house or visitors' day program, invitations, publicity, plant cleanup, safety, first aid, transportation, refreshments, inspection tour and accompanying lecture, exhibits, decorations and literature, follow-up contacts with visitors, press and the radio.

Petroleum Council Committee On Reserve Productive Capacity

IN RESPOSE to a request from the Honorable J. A. Krug, Secretary of the Interior, the National Petroleum Council, Washington 6, D. C., has appointed a 17-man committee on Crude Petroleum Reserve Capacity. At its meeting on July 28, the Council adopted recommendations for a committee to make a formal study to provide a substantial crude petroleum domestic reserve productive capacity to be available in the event of an emergency. When its studies are completed the committee will render a formal report to the Council.

Chairmanned by L. F. McCollum, Continental Oil Co., the committee includes among its membership R. F. Baker, The Texas Co.; Max W. Ball, petroleum consultant; B. Brewster Jennings, Socony-Vacuum Oil Co., Inc. and Robert E. Wilson, Standard Oil Company (Indiana).

Nassau County Group To Hear Butler, Sept. 20

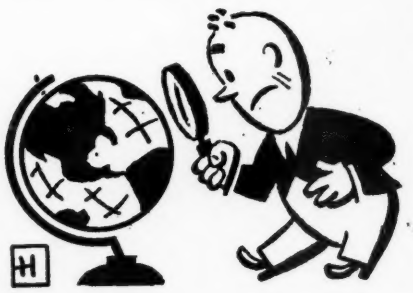
THE FUEL OIL & Oil Heating Dealers of Nassau, Inc., will meet in Hempstead, Long Island, at eight o'clock on the evening of September 20 to hear Wiley Butler, president of Coastal Oil to discuss the proper presentation of oilheating to the public.

At press time the exact place of the meeting had not been determined, since some larger than ordinary hall is to be used, but as the date approaches this could be learned by phoning any of the larger Nassau County dealers.

Concrete Slab Floor Poured In Warm Air Research Residence

NEARING COMPLETION, the concrete slab floor was poured on July 15 in Research Residence #3, being constructed at Urbana, Ill., by the National Warm Air Heating and Air Conditioning Associa-

WHERE ON EARTH
***did all these* BOILERS**
Come from?
BEACON BOILER BOOK
gives facts on more than 10,000



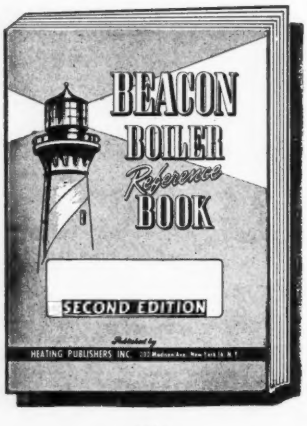
THIS second edition contains ratings and major specifications of boilers old and new. Complete, comprehensive. More than 5,000 boiler trade names. More than 250 makes.

Handy size 8 x 11. More than 200 pages.

Seven years ago we labored over the first BEACON BOILER BOOK. That edition sold out rapidly. The war and the postwar confusion upset our plans to bring out a revised and up-to-date edition.

This second, latest one contains more data and is made up in a handier size. It contains ratings on domestic-heating boilers up to 2000 square feet.

All ratings are taken from the MANUFACTURERS' own statements of specifications and technical information.



$3

For Makes You Never Heard Of, But Ones You'll Meet Someday.

HEATING PUBLISHERS, INC.
232 Madison Ave., New York, 16

it's GALONGAGE for DURABILITY! RELIABILITY! EYE APPEAL!

Galongage is designed and constructed to meet the most exacting requirements for durable and reliable service . . . of all the *Galongages* shipped during the past three-year period, only one in each five thousand has been claimed to be defective.

Outstanding in its field, *Galongage* appearance does credit to the finest heating installation. Only *Galongage* measures in gallons . . . has an easy-to-read magnifying lens. Is easiest to install . . . requires only a 4-inch head clearance. *Galongage* fits all standard sized basement tanks and is approved by Underwriters' Laboratory. *Galongage* is calibrated for each standard size 275-250 and 220-gallon tank with depth of 44"-42", 27" and 26" in depths with 1½" and 2" openings. The *Galongage* that measures in inches is especially suited to off-size tanks.

When ordering, be sure to specify depth of tank, size of opening, and calibration desired.

Galongage

FIL-THRU— Also available, the new FIL-THRU gauge for 55-gallon drums. Write for details and price lists today.

A PRODUCT OF APPLIED MECHANICS COMPANY, 167 OLIVER STREET, BOSTON, MASS.

CANADIAN REPRESENTATIVES: *Railway & Engineering Specialties Ltd., 417 St. Peter Street, Montreal*

fueloil & oil heat

tion, Cleveland 14, Ohio. Built to test the most suitable low-cost heating systems for homes in the six to ten thousand dollar price range, the residence is typical of today's small home construction and has no storm windows, weatherstripping or wall insulation.

The residence is a 4½ room basementless, slab-on-ground type of standard frame construction, with cedar shingle exterior walls. The inner sides of the exterior walls consist of ⅜" gypsum board with aluminum foil backing; the ceiling is ½" gypsum board with aluminum foil backing to serve as a vapor barrier and has 4" mineral wool insulation above. The hallway is furred down 12" to accommodate a plenum to be used with the heating systems.

Four separate systems will be tested during the 1949-50 heating season, the principal one to be a peripheral, or perimeter, system in which 8" round warm air ducts are run in the concrete slab. These ducts are in the form of two loops, leading from a pit below the furnace toward the outside walls and then parallel to the outside walls so that the loops enclose practically the entire floor area. The ducts are located 2" below the top surface of the slab, with 2" of concrete below the duct and 2" to 3" of gravel below that. Where there is no duct imbedded, the concrete slab is 4" thick over a 4" gravel fill, with vapor barrier between.

The system will function actually as a split system, with panel effect produced by the ducts in the slab and convection effect by introducing warm air into the rooms. For the most part warm air will be supplied by floor registers, with the exception of a 14" x 6" baseboard register in the dining area, to be used as an alternate register for testing purposes and a 10" x 6" high wall register in the bath. To test the effect of long runs alternate registers are in the bedrooms.

A conventional hi-boy furnace will be used, with the warm air it produces forced from the bonnet downward into the pit below the furnace and through the ducts. To determine characteristics of heat flow, groups of thermocouples have been installed in the slab, the ground and the foundation. Others have been placed in the ducts, on the interior floor surfaces, at levels of 4", 30" and 60" above the floor and 4" below the ceiling in each room. All thermocouples are connected to the main instrument panel located in the garage which serves office and instrument room.

Baltimore OHI Group Plans Advertising Program

AT AN AUGUST 16 meeting of the membership of the OHI of Maryland in Baltimore, plans were outlined for a cooperative advertising campaign in local newspapers to re-emphasize to the public the merits of oilheating. Natural gas has been promised for the area some time next Spring and while oilheating enjoys an extraordinarily high standing in the community the dealers think it best to fortify their position.

A. E. Hess, managing director of OHI of America, showed the group illustrations of advertising material prepared by Lon Casler, the Institute's public relations counsel. Robert Gray, of FUELOIL & OIL HEAT, discussed natural gas competition in its application to eastern cities.

THESE *Bethlehem* DYNATHERM FEATURES BRING YOU

MORE SALES AND MORE PROFIT

When you start talking Automatic Heat to your customers, Bethlehem DYNATHERM offers you all the features that make your sale easier.

- **The Whirling Flame.** Extracts every bit of useful heat from every last drop of oil, assuring big savings on fuel bills!
- **Unit Engineering.** Design and construction as an integral unit results in far greater heating efficiency.
- **"Thermos Bottle" Insulation.** Radiation and heat loss are minimized throughout the non-heating season.
- **Beautiful Cabinet.** Duotone baked enamel cabinet with chromium hardware will blend perfectly with the other surroundings.

And despite the DYNATHERM'S outstanding advantages it costs amazingly little more than converting an old boiler!

A few exclusive Bethlehem Dynatherm territory Franchises are still available. Wire or write immediately for full information.

BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

ROADSIDE REPORT *by R. L. Counts, General Manager of L. P. Steuart & Bro., Inc., Washington, D. C. Ford Model F-8 shown has a G.T.W. rating of 39,000 lbs.*

"As hill climbers our Ford F-8 BIG JOBS can't be beat!"

"WE NOW have 54 Fords of all models in our fleet," reports R. L. Counts, General Manager of L. P. Steuart & Bro., Inc. "Last year we bought three Ford Model F-8's. We are mighty happy with their performance and our drivers like the way they handle. As hill climbers our Ford F-8 BIG JOBS can't be beat! We have had no serious mechanical trouble of any nature and will eventually replace our tractors of other makes with Ford BIG JOBS."

In terms of *Payload-Performance* the Ford BIG JOBS have no equal in their class. No other truck offers so much payload capacity in relation to chassis weight, with as high a horsepower rating per gross ton. This means bigger payloads within legal load limits. It means faster, more profitable delivery of big loads. Ford's high *Payload-Performance* is evidence of Bonus Built construction. Each of over 150 Ford Truck models is Bonus Built . . . built extra strong to last longer.

ONLY THE FORD BIG JOB HAS ALL THESE FEATURES

- ★ New 145-h.p. Ford V-8 engine for top performance.
- ★ Ford concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions—overdrive or direct-in-fifth—for operating flexibility.
- ★ Big Ford power-operated hydraulic brakes; front 16-inch by 2¼-inch; rear 15-inch by 5-inch double cylinder on F-7, 16-inch by 5-inch double cylinder on F-8. Air brakes also available for F-8.
- ★ Ford Super Quadrax single speed axles; two-speed axle available in Model F-8.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight Ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross Combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

FORD 1949 *Bonus Built* TRUCKS 1959

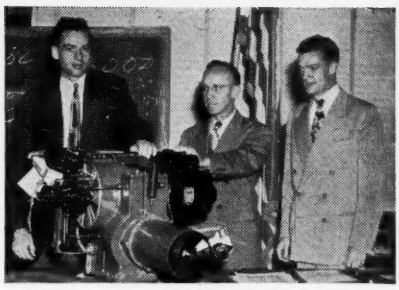
BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 6,106,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

Manufacturers Activities

Metropolitan New York Dealers At Hev-E-Oil Burner Schools

MORE THAN one hundred dealers attended a two-day school, held at the Hotel New Yorker, New York City on August 4 and 5, for outlets handling the Hev-E-Oil burner made by Cleaver-Brooks Co., Milwaukee 12, Wis. Howard McCoy, chief engineer, Hev-E-Oil Burner Division, conducted talks and demonstration on the mechanical and engineering construction of the burner, while Frank M. Wymbs, Heavy Oil Burner Distributors, New York, N. Y., for whose dealer organization the meeting was held, lectured on sales policies and potentialities. All models of the burner were displayed at the meeting, which was attended also by representatives from Minneapolis-Honeywell, Thermobloc Div. of Prat-Daniel Corp., Mercoid Corp., McDonnell-Miller and Petrometer Co. All spoke briefly on their equipment. Another speaker was J. Collins of Cleaver-Brooks Steam Generator Division, who explained operation of the unit and the sales policies of the division.



Shown grouped around *a Hev-E-Oil burner are Howard McCoy, center, chief engineer, Cleaver-Brooks Hev-E-Oil Burner Div. and Carleton F. Wymbs, left, assistant sales manager and Frank F. Wymbs, Jr., sales manager, Heavy Oil Burner Distributors.*

During the school the appointment of North Shore Fuel Oil Co., John Davern, president, as distributor for Queens County, N. Y., was announced. Also named were Bedford Oil Co., Charles Krunenaker, president, as distributor for Nassau County, N. Y. and Huntington Utilities, Joseph Gazi, president, Suffolk County, N. Y., distributor. New dealers appointed were Dietz Automatic of Ridgewood; Demand Oil Co., Bronx; J. J. Moroney, Westchester; Schneider Fuel Oil, Bronx; Edward Kiss Co. and Stokes Automatic Heat, Manhattan, all New York.

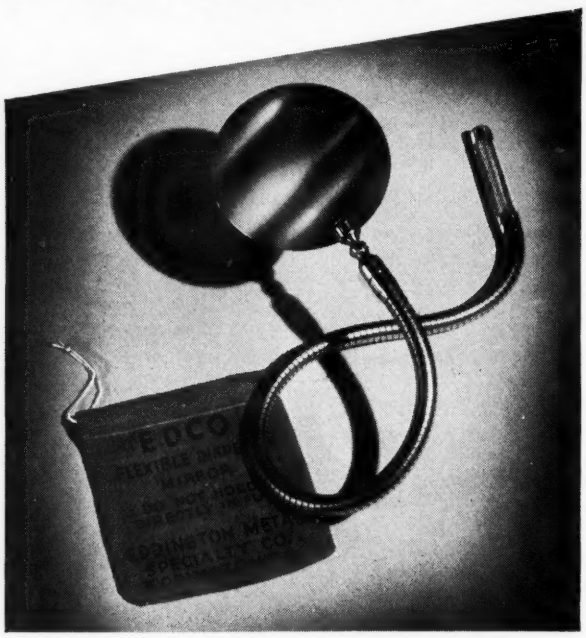
An earlier and successful service school was held August 2 by W. P. Gilbert Co., Irvington 11, N. J., attended by about sixty dealers. The company is wholesale distributor for Cleaver-Brooks in five counties in New York, Staten Island and the state of New Jersey. W. P. Gilbert sponsored the meeting, held at the headquarters of his company, assisted by Mr. McCoy in conducting the school.

Detroit Branch Office Opened by White-Rodgers

A NEW BRANCH OFFICE has been established in Detroit by White-Rodgers Electric Co., St. Louis 6, Mo. Located in the General Motors Building, the office will serve Detroit and the surrounding area and will be in charge of Charles M. O'Brien, district manager. The company maintains branch offices also in New York and Chicago, with resident sales engineers in principal cities.

ORDER *NOW* FOR CHECK-UP TIME

EDCO FLEXIBLE INSPECTION MIRROR



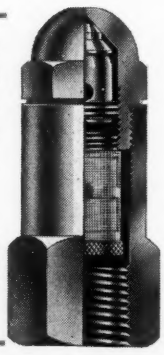
Save time this Fall—check flame characteristics, the combustion chamber, ignition setting, flue passages and internal parts of heating systems *efficiently and easily.* This highly polished inspection mirror has a 21" flexible handle that adjusts to any position.

The 98 sq. in. of filter area makes the EDCO FILTER NO. S-252 your best buy for complete satisfaction.

Individually boxed 24 to the case. Interchangeable with other makes.

EDCO Triple-Tested NOZZLE is tested for spray angle, atomization and actual rated capacity.

Packaged for safety. Keep an adequate supply on hand.

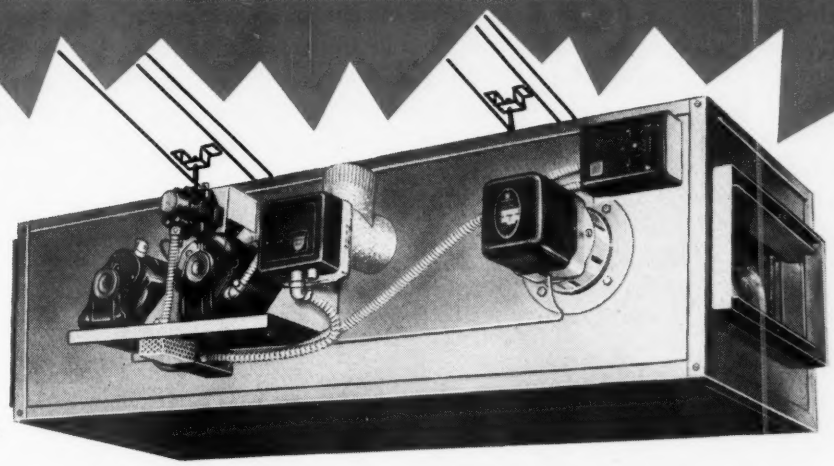


EDCO

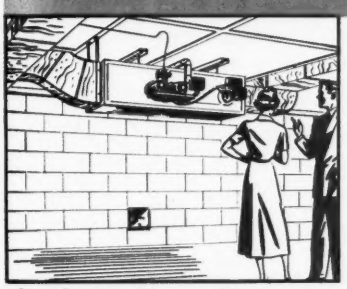
WRITE TODAY FOR PRICES

EDDINGTON METAL SPECIALTY CO.

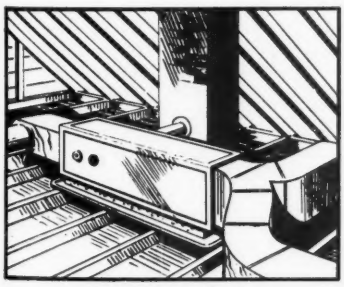
P. O. BOX K, EDDINGTON, PA.



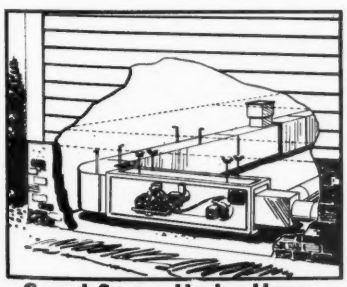
A Package of Heat



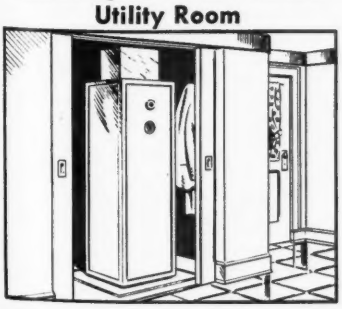
Six-Room House Basement



Attic Installation



Crawl Space Under House
Utility Room



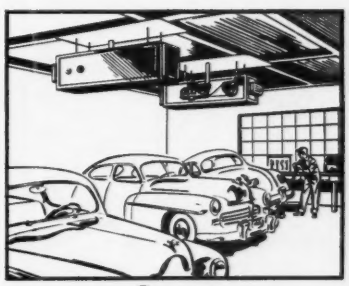
It *hangs* up . . . . or it *stands* up!

Here is the new Master Kraft suspended model Warm Air Conditioner with a capacity of 75,000 BTU—a complete "package of heat" which opens up an entirely new range of sales possibilities for you.

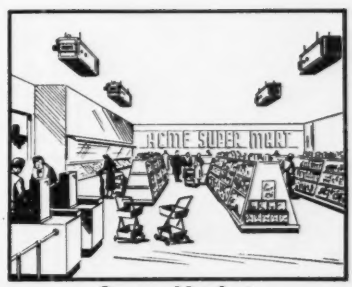
It is ideal for home installations in basement, attic, crawl space, or utility room. But that is not all! It is being sold like hot cakes by Master Kraft dealers all over the country for commercial installations. Stand it up . . . or hang it up . . . use it wherever you need a unit heater!

Write today for complete information. This unit is selling so rapidly that we have been obliged to put our factory on a two-shift basis. Don't delay, send that coupon today.

Temporary Building



Garage



Super Market

MAIL THIS TODAY

Master Kraft
OIL HEAT

HARVEY-WHIPPLE, INC., Dept. FO-4
Springfield 1, Mass.
Please send me full details of the sensational, new Master Kraft Suspended Warm Air Conditioner.

Name .....
Address .....
City ..... Zone ... State .....
Main line of business .....

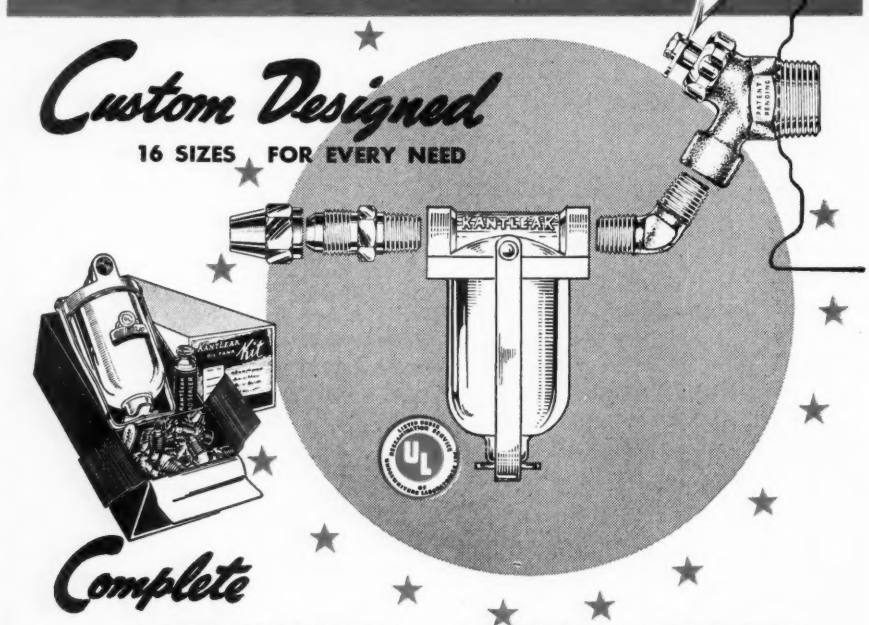
fueloil & oil heat

Scully Signal Booklet Cites Delivery Savings

A BOOKLET, prepared by Scully Signal Co., Cambridge 41, Mass., and titled, "The Profit Story of VENTALARM Tank Fill Signal," contains data built up from field experience. With illustrations and drawings, accompanied by brief explanatory copy, the booklet contrasts the number of steps involved in delivering oil to a tank equipped with a VENTALARM signal and one not so equipped. In the latter case there are ten steps enumerated which the driver must make at each of his daily twenty-four stops, as compared with five when the delivery is made to a storage tank on which a "whistling tank fill signal" has been installed.

With the elimination of half the moves at each delivery, a five minutes saving per call is claimed, for a two hour saving per day and a total of 264 hours saved in twenty-two weeks per man truck. In the booklet these time savings are converted to dollars and cents figures for yearly savings per man and truck, with a tabulation to illustrate the five year profit potential when 1,000 fuel accounts are equipped with signals. Another advantage is described as the ability to handle more oil contracts with the same equipment by permitting more calls per truck to the time saved delivering to VENTALARM equipped tanks.

• BIGGER PROFITS
• LOWER INVENTORY
with the 'One Package'...
KANTLEAK
OIL TANK KIT



Custom Designed
16 SIZES FOR EVERY NEED
Complete
★ SIMPLE TO INSTALL ★ COMPACT ★ LOW COST
A trouble-free installation Kit that will balance your stocks, reduce slow moving parts in your bins and cut sales time to a minimum. Dealers already supplied report no sales resistance... The Kantleak 'one package' Kit meets with instant approval. Filter approved by Underwriters' Laboratories for No. 1, 2 and 3 fuel oil.
— SEE YOUR LOCAL JOBBER OR WRITE DIRECT —
ABC
KANTLEAK PRODUCTS
ANDERSON BRASS CO.
5305 TWELFTH DETROIT 8, MICHIGAN

Harvey Named Penn Service Station; Appoints Mandell, Inc.

SID HARVEY, INC., Valley Stream, N. Y., under an agreement concluded with Penn Electric Switch Co., Goshen, Ind., will administer the Penn Control Replacement Plan and the Penn Warranty in eleven of the Sid Harvey stores located on the east coast. The program will include testing and repairing Penn controls in warranty on a no charge basis, as well as normal reconditioning. All stores will stock the controls for immediate exchange while the rebuilding will be done at Harvey's Valley Stream, N. Y., plant. There, factory trained personnel, modern testing and repair equipment will be employed.

Win Mandell, formerly of Sid Harvey, Inc., has formed an oilburner parts supply house, W. A. Mandell, Inc., Buffalo 16, N. Y., and has been named a Sid Harvey distributor. The new company opened for business on August 1 and will carry the complete line of Harvey replacement parts, including rebuilt pumps, valves, transformers and controls. Mr. Mandell started with Harvey in 1935 as a helper in the dismantling department and subsequently worked in every branch of the business, including management of the Boston branch.

Two Timken Meetings Inaugurate Selling Season

MEETINGS attended by regional and district sales managers of Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich., have been held in Chicago, July 28 and 29 and in New York on August 8 and 9.

Plans and objectives were discussed for the rest of the year, with particular emphasis on the importance of aggressive selling during the fall season. Details were disclosed, too, of the Sellabration contest the company is conducting for sales personnel. Winners will spend an all-expense six day vacation at Virginia Beach, Va.

SUN-RAY PROVIDES THE HEAT THAT SAVES THE FUEL

Superior Sun-Ray Design Featuring "Shell" Combustion Head Saves up to 30% in Fuel

- RAISES CO_2
- LOWERS STACK TEMPERATURE
- NO SMOKE—NO SOOT
- NO ODOR—NO NOISE
- POSITIVE OIL CUT-OFF
- SUPERIOR CONTROL OF AIR AND FLAME
- PRECISION-BUILT

WITH Sun-Ray's reputation of 20 years as one of the world's largest producers of quality burners —

PLUS Sun-Ray's skill in design and precision engineering to meet the highest specifications for burner dependability —

PLUS Sun-Ray's research, in cooperation with Shell Oil Company's combustion engineers, to adapt the famous Shell Combustion Head to the Sun-Ray Burner —

YOU GET the best in oil heating, a new high in combustion efficiency, a new low in fuel consumption.

Sun-Ray Series "S" Burners provide a method of controlled mixing of oil and air and double oil atomization to produce a flame that burns oil (catalytic as well as straight distillate) cleanly, completely with minimum of excess air. Comparison with conventional gun-type burners shows that the Series "S" Burner saves up to 30% in fuel, provides clean heat, requires less service.

FAMOUS THE WORLD OVER FOR QUALITY AND ECONOMY

Inquiries invited from Boiler and Furnace Manufacturers

SUN-RAY FULLY AUTOMATIC OIL BURNERS

SUN-RAY MODELS
6 Sizes—0.75 to 25 gal./hr.

Series "S"—3 Sizes—0.75 to 6 gal./hr.

MARINE MODELS
4 Sizes—0.75 to 25 gal./hr.

SUN-RAY BURNER MANUFACTURING CORP.
Name formerly Independent Oil Burner Corporation
139-22 QUEENS BOULEVARD • JAMAICA 2, N. Y.

Petro Shifts Field Men In Selling Change-Over

WITH THE APPOINTMENT on May 1 of R. T. McTarnahan as sales manager of branches, Petroleum Heat & Power Co., Stamford, Conn., began to speed up changing the operation of its branches from retailing to wholesaling oilburners. More recently, due in part to increases in Petro's industrial burner and heavy oil sales, it was decided to relocate some national field representatives and assign them to various branches to accelerate the selection and development of dealers in branch areas and to capitalize fully on the industrial sales potentials.

The following have been transferred to the branches indicated: Jess R. Crews, Chicago; George S. Elder, Providence; Ernest A. Goyette, Mineola, N. Y.; William J. Hegan, Chicago; George A. Moore, Philadelphia; James E. O'Donnell, Stamford and William A. Webster, Baltimore. In addition, Joseph R. Arden, who has been conducting service-selling meetings for Petro wholesalers and their dealers, now is concentrating on service educational activities in the branches.

NO COMBUSTION CHAMBER REQUIRED

NO CARBONIZING ON NOZZLE OR IGNITION POINTS

HIGHER CO_2 — GREATER COMBUSTION EFFICIENCY

INSTALLATION PROBLEMS GREATLY SIMPLIFIED

SWIRLING HEAT

THE BETTER OIL BURNER!

Dealers! Learn about the interesting profit possibilities in this modernized line of superior products. Write today.

SWIRLING HEAT CORPORATION, 1775 BROADWAY, NEW YORK 19, NEW YORK

RESEARCH LABORATORIES, 2818 N. WASHINGTON BLVD. ARLINGTON, VIRGINIA

SINCE 1929

Staffco In Production At New Chicago Location

STAFFCO ENG. CO., formerly at 2320 W. VanBuren St., now is operating at full capacity at its new location, 6600 S. Austin Ave., Chicago. The factory was built especially for the manufacturing and development of industrial rotary oilburners and is equipped for research and experimental work.

Space consists of a 10,000 sq. ft. building, located on two acres of land in the Clearing Industrial District of Chicago. Management and executives remain the same. Fred Ravnsbeck is president and chief engineer; J. S. Schurman, vice president and treasurer. R. W. Soby is assistant engineer.

New Package, Leaflets Announced by Grant Wilson

A RESTYLED and modernized package has been developed for the asbestos insulating cement offered by Grant Wilson, Inc., Chicago 4, Ill. The new package, printed in black and chrome yellow for high visibility in store display, contains reading matter outlining product benefits. Applications are shown in small sketches.

The package is constructed of sturdy corrugated cardboard and needs no further wrapping or packaging for shipment. Stimulation of retail sales was described as a primary reason for restyling the package.

Two leaflets also have been prepared by Wilson. A pipe covering circular illustrates different types of covering for hot water, steam and cold water lines and gives list prices and carton contents. An asbestos hot water jacket circular shows the jacket being applied to a hot water tank and features pictures of housewives enjoying the benefits of the fuel saving units. Both leaflets leave space for dealer imprinting.

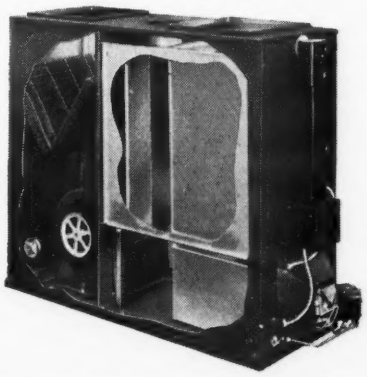
Shell Celebrates First Flow Of Crude Through New Line

THE FIRST FLOW of crude oil through the 1000-mile pipe line from New Mexico to Shell Oil's refinery at Wood River, Ill., was recognized officially with brief ceremonies at Wood River on July

H.C. LITTLE—THE ONLY VAPORIZING FURNACES THAT AUTOMATICALLY LIGHT THEMSELVES!

FACTORY ASSEMBLED H. C. Little FURNACE—BURNER UNITS With Automatic Self Lighting!

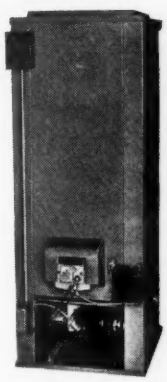
FOR BASEMENT INSTALLATION:



WINTER AIR CONDITIONERS—They run themselves—and with maximum economy! Size A, Type AC-2, 84,000 BTU output; Size B, Type AC, 125,000 BTU output.

FOR FIRST FLOOR INSTALLATION:

A NEW LOW COST UNIT FOR SMALL HOMES



Front panel removed to show motor and blower.

UPRIGHT FORCED AIR UNITS — DU-44 C.I.B.L., 78,500 BTU output, compact and ideal for small home utility room installations. DU-44 C.I., same except no blower or motor, for gravity basement installation. 60,000 BTU output.

Now—The H. C. Little Catalytic Heat Control is standard equipment on all units, for greatly improved performance with low cost catalytic furnace oil. It's also available to modernize existing H .C. Little installations.

There's magic sales appeal in exclusive H.C.Little automatic self lighting, with 100% electric control- no pilot light!

It happens time after time, day in and day out, all over America. People walk in to their local heating dealer and say, "I want to SEE one of those H. C. Little furnaces that LIGHTS ITSELF!" They just can't resist the magic sales appeal of that phrase!

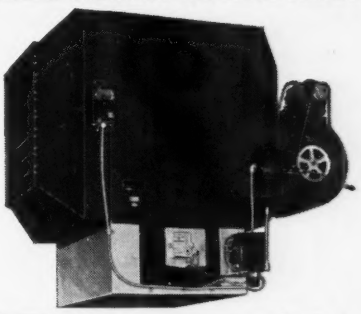
More than three out of every four furnace prospects live in five or six-room houses. Therefore, they're logical prospects for vaporizing equipment. Especially, for H. C. Little vaporizing equipment — the ONLY units of this type that are TRULY AUTOMATIC — with 100% electric ignition and control. No wonder H. C. Little is the easiest oil heating equipment to sell — and the most profitable!

Inquiries regarding dealerships should be addressed to Dept. 9

H. C. Little Burner Company

SAN RAFAEL, CALIFORNIA

FOR OVERHEAD HEATING TO SAVE FLOOR SPACE:



CEILING FURNACE — Factory assembled, including controls. Ideal for garages (U.L. listed), stores, factories, etc. Type CF-140, 140,000 BTU output. For large areas, use several units, each zoned and operating through its own thermostat for maximum comfort and economy.

15. Illinois State Representative Leland Kennedy opened the gate valve which permitted the first barrel of crude to flow from what is described as the largest privately-constructed pipe line ever built in America.

Designated the Basin and Ozark Pipe Line Systems, the lines stretch from Jal, New Mexico, via Cushing, Oklahoma to Wood River and Patoka, Ill. The Basin pipe line system, a combination of 20, 22 and 24-inch diameter pipe running the 515 miles from Jal to Cushing, will have a capacity of 241,000 bbls. daily. The 22-inch diameter Ozark system, connecting with the Basin line at Cushing, will handle 186,000 bbls. daily. At Cushing and Patoka the system will connect with lines of other companies.

Koven Adds Metal Spraying Shop to Factory Facilities

ADDITION of a metal spraying shop to its facilities at its Jersey City, N. J., plant has been announced by L. O. Koven & Brother, Inc. Equipped with all purpose Metco metal spraying equipment, the shop is set up for metal surfacing with coatings of any metal in wire form of either low or high melting point.

The process is applicable for surfacing of shafts, spindles, bearings and bearing surfaces, tanks, patterns, cores and other assemblies.

Dielectric Catalogs Oilburner Ignition Electrode Assemblies

STANDARD and special designs of ignition electrode assembles are shown in a catalog prepared by Dielectric Products Co., Inc., Jersey City 5, N. J. Following a brief outline of the company's activities and background in research and manufacture of steatite electrodes, there are shown five standard assemblies. Dimensional data is included for each, along with a table listing which of the five types is applicable to 125 oilburner models.

Reproduced on eight pages of the catalog are 68 ignition electrode assemblies made up to manufacturers' special designs. Each is shown labelled for the make of burner for which designed, with dimensions and models numbers.

Gorton Names St. Louis Sales Representative

APPOINTMENT of C. E. Malone Co., St. Louis 8, Mo., as its sales representative has been announced by Gorton Heating Corp., Cranford, N. J. The Malone company will handle the Gorton line of vapor equalizing valves and air eliminators in the St. Louis territory.

General Controls Opens Branch In Cincinnati

BRINGING to a total of twenty-one the number of branch offices the company maintains, General Controls Co., Glendale, Calif., recently announced the opening of a new branch in Cincinnati. Jack Prutow is branch manager of the office, which will service southern Ohio, southeastern Indiana and central Kentucky. The new office is located at 307 East 4th St.

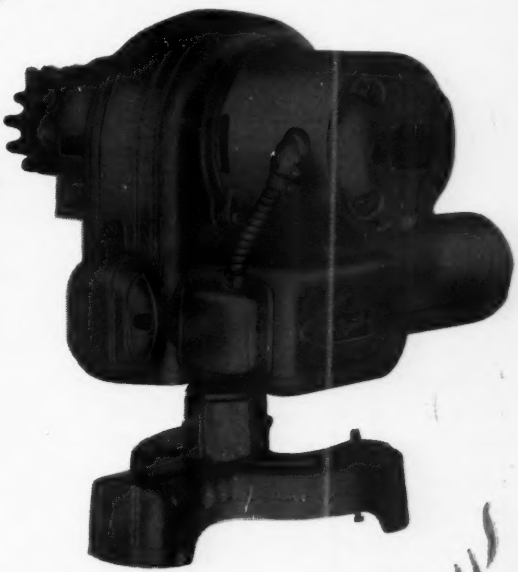
J. F. Ray, vice president in charge of sales for General, reported also the moving of the Oklahoma City branch to 1427 East 6th St., Tulsa, Okla. O. D. Shaddox continues as branch manager.

The Customer Always Returns
General
FUEL OIL FILTER
DE LUXE MODEL
2A-300
Model 2A-300 for exceptionally dirty tanks and large furnaces and boilers. .9-1/16" high; 5-1/2" diameter; 3/8" pipe openings.
General
FUEL OIL FILTER
STANDARD MODEL
1A-25
Model 1A-25 for space heaters, hot water heaters and small furnaces. 4-3/4" high; 3-1/2" diameter. Same style but with double capacity available as Model 2A-700.
FOR YOUR PASSENGER CAR OR TRUCK
General Filters are now available for your car or truck. Cartridges changed in one minute without tools. Complete kits include brackets for either engine or dash mounting. Put one on your car and truck. Regular dealer discounts.
You can be sure of repeaters when you sell a General Filter because the customer is always pleased with his money saving investment. So pleased, that it is natural for him to return year after year for a new cartridge. And your profit doesn't stop at the initial sale; it goes on and on with only a minimum of service from you.
A General Filter on every fuel oil burning installation is a good deal for both you and your customer — you make a nice profit on every sale and your customer is saved annoyance and expense from clogged burners.
MORE THAN 1600 JOBBERS TO SERVE YOU
GENERAL FILTERS INCORPORATED
GENERAL FUEL OIL FILTER
12890 WESTWOOD AVE. DETROIT 23, MICHIGAN
CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 173 STRACHAN AVE., TORONTO 3, ONTARIO

JOIN THE TEAM THAT SHOWS YOU HOW TO PROFIT FROM THE ECONOMY OF QUALITY

PROGRAM PROGRAM

REXOIL OIL BURNER



DOES MORE

DOES IT BETTER

AT LESS COST

HITS every time with the combined, trouble-free economy of High Heat Combustion Head, Monotrol Air Adjustor, Air Stream Turbulation and Quick Cut Off Fuel Hoarder. All *patented* REXOIL exclusives that YOU can prove will save money in the long run.

PITCHES a shut out against all competition regardless of "first-cost" comparisons. The result of over a quarter century designing, developing and perfecting a *superior* oil burner. No REXOIL has ever worn out . . . that's the kind of economy you can sell with *confidence.*

FIELDS errorless ball that has saved the day for many a dealer who formerly lost money and good-will on competitive installations with ordinary burners. *Quality tells* . . . everytime!

SCORE BOARD

If you want to join the winning team in this world series of a buyer's market, fortify yourself with the best. Get REXOIL and be ready to hoist the "profit-pennant" at the end of your most successful heating season—ever!

REIF-REXOIL, Inc.

37 Carroll Street, Buffalo 3, N. Y.

Pioneer Manufacturers of a complete line of
OIL BURNERS • FURNACES • BOILERS

SOHIO Repeats Cooperative Advertising Arrangement

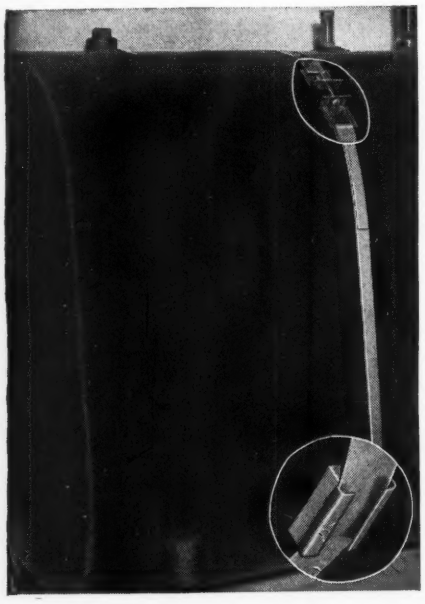
ENCOURAGED by the success of its oilburner dealer tie-in promotion advertisement which was run in the month of June in Ohio, the Standard Oil Co. (Ohio), Cleveland 15, Ohio, has announced plans to run a second advertisement on the same basis during September. The June offer resulted in the advertisement being run in 93 localities, with tie-in advertisements placed by 451 dealers.

Under the repeated offer, SOHIO again agrees to publish an advertisement, captaioned "Start Now . . . and enjoy this winter with clean, low cost, automatic oil heat," in any city where two or more separate burner dealers will publish simultaneously separate advertisements for themselves which will total fifty or more advertising inches. A box across the bottom of SOHIO's advertisement is addressed to home owners in each particular area, referring them to local dealers for oilburner work.

USE

***TANKIT**

An emergency kit to stop a leak in an inside fuel oil tank instantly. IS TO BE USED FOR TEMPORARY RELIEF until such time as the fuel is consumed and the tank replaced. TANKIT is then to be put back in container for future use.



NEW LOW PRICES!

*Reg. *Pat. Pend.

1-2 $3.00

3-11 $2.75

12 or more $2.50

WRITE FOR YOUR NEAREST DISTRIBUTOR

TANKIT CO.

Box 174 Cedarhurst, N. Y.

Perfection Stove's Plant Honored with Bronze Plaque

THE NEWLY-EXPANDED Ivanhoe Road plant of Perfection Stove Company in Cleveland, Ohio, has been awarded a bronze plaque by the Cleveland Chamber of Commerce as the "best factory building completed in Greater Cleveland during 1948." Selection of the buildings to be cited is made by a jury of architects, artists, engineers and the County Building Commissioner.

The plant also received a gold seal award last March for the excellence of its Press Building lighting and a merit award for outdoor lighting at the plant.

New England Representative Assigned by Catskill Metal

ASSIGNMENT of Normand A. Picard, Holbrook, Mass., as its New England representative has been announced by Catskill Metal Works, Inc., Catskill, N. Y. He will handle the company's three models of conversion oilburners, ranging in capacities from ¾ to 7 gph, and will represent the company also with its line of anthracite stokers.

Mr. Picard, well known to the New England heating trade, maintains a sales organization for adequate coverage of the territory.

Homer Furnace Markets New and Complete Line

A NEW AND COMPLETE line of gas, coal and oil furnaces now is being marketed by Homer Furnace & Foundry Corp., Coldwater, Mich., makers of the original Homer cast-type furnace. The firm was forced to withdraw from the manufacture of warm air heating equipment during the war and now resumes with a broader line than at any time in its thirty-five year history.

The new line, ranging from 75,000 to 400,000 Btu models, augments Homer's other equipment such as blowers, conversion oilburners, filters, controls and repair parts.

National Reopens Its Trenton, N. J., Plant

DIRECTORS of the National Radiator Co., Johnstown, Pa., met at the Hotel Hershey, Hershey, Pa., on July 22 and decided to reopen the Trenton, N. J., manufacturing plant. Manufacturing operations there had been suspended in April and reecnt increases in orders for cast-iron radiators were credited for prompting the decision to reopen the plant on August 1.

Carroll M. Baumgardner, vice president for sales, and Benjamin T. Hain, vice president for manufacturing, both were elected to the board of directors. John G. dePass, general credit manager, was elected assistant secretary.

U. S. Register Offering New Pocket Manual No. 50

PREPARED as a small sized edition of the company's large 64 page catalog, the No. 50 warm air register and grille manual is available from United States Register Co., Battle Creek, Mich. The pocket manual contains 40 pages of data and has been designed especially to be compact and yet a complete register catalog. It measures 6½ x 3¾" wide, and fits easily into a coat or pants pocket. Copies may be obtained by requesting them from the company's main office.

The manual arranges the contents with a section on registers and grilles for use with gravity system, followed by a larger but similar section of air conditioning registers. For each model and type shown there is included the list price, along with dimensional data where applicable. Included are data on damper regulator sets, air dampers and other accessories.

Monogram Catalog Covers Lite-Cast Combustion Chambers

AN ATTRACTIVE, informative twelve-page catalog, available from Monogram Products Co., Philadelphia 4, Pa., is devoted exclusively to its complete line of pre-cast combustion chambers. Well illustrated, the catalog contains specifications of the standard and special cham-

For a quarter of a century, Teesdale Wall Pumps have been used for heavy-duty service where reliability was essential. Design and construction remain just as the industry's veterans have always known them—THE BEST.

It is this "best" which is the foundation of Teesdale economy and the reason why old timers in the business will use nothing else.

DESIGN AND OPERATION

A Teesdale Wall Pump is a completely integrated machine. It has (1) a motor driven, rotary pump, submerged in an ample 16-gauge steel reservoir, (2) OFF and ON switch controls for intermittent operation and (3) its own built-in safety devices. It lifts fuel oil from the storage tank and automatically delivers it by gravity in a measured supply in accordance with the varying requirements of the burner. It requires no further attention.

The standard 30 gph Model "TUX" and the 75 gph Model R have the same general design, but naturally their parts differ. In one pumping cycle, Model "TUX" delivers 3 pints, while the Model "R" delivers 2 gallons.

CAPACITY AND PERFORMANCE

Using a ½" suction line, allow 1" of vacuum for each foot of vertical lift, for each 20' of horizontal run or for each elbow or bend. At no lift and without restrictions, Model "TUX" pumps 30 gph. At a 25' vertical lift or its equivalent, it pumps 25 gph. With the same size suction line, Model "R", at no lift or without restrictions, pumps 75 gph or at 18' vertical lift, 65 gph. These standards are based on fuel oil of 38 to 40 Baume, and assure a liberal margin of safety when pumping is intermittent.

The reason for this high standard of performance is the ingenious design of the Teesdale Pump. The motion of the rotor, a cam-actuated semiroll assures silent operation and exceptionally long service life—up to 25 years.

The motor is a high starting torque unit, standard for 110 volt, 60 cycle alternating current, but motors of other specifications are available as extras.

INSTALLATION

The Teesdale Pump is easily installed by one man. There is just one simple electrical connection, and the practical wall mounting bracket shipped with each pump is just as easy to handle. Another item in the package is the Teesdale Unicheck Valve which prevents drain-back.

The piping consists of suction and overflow lines between pump and fuel tank and a feed line to the burner. For Model "TUX" use ½" inlet and feed lines with a 1" overflow line. For Model "R", use ¾" inlet and feed lines with a 1" overflow line.

The Autopulse distribution plan makes Teesdale Pumps available to all recognized wholesalers. Autopulse distributors are adding Teesdale Pumps together with reconditioned pumps and accessories to round out a complete line for gravity, rotary and pot type burners. Your inquiry is invited.

- Ample Stocks
- Prompt Service
- Through Reliable Burner Supply Firms

Write for Further Details or Place Orders Directly with Autopulse

AUTOPULSE Corporation

LUDINGTON, MICHIGAN

bers produced and affords considerable data on correct sizes, methods of installation and the general importance of combustion chambers in domestic oilheating installations.

Inner pages of the catalog contain pictures of the various types of chambers offered, accompanied by a brief description of each model, outlining its features, components, dimensions and the gph capacities for which it is recommended. Other pages give similar data for chambers made to specifications of manufacturers. The booklet concludes with a page of general information on standard Lite-Cast and Hi-Duty Lite-Cast insulating refractory.

West Coast Quiet-Heet Merges With State Supply

A MERGER of the State Supply Co. and West Coast Quiet-Heet, Inc., with offices at Portland, Ore. and Seattle, Wash., has been announced. The business, to be operated as West Coast Quiet-Heet from both locations, has issued a Fall catalog listing a complete line for the oilburner and heating trade. Melvin A. Peters and Arnold Foster are principals in the organization.

The catalog is described as preliminary to a new edition that will be issued early next year. The present edition pictures and describes a line of boilers, furnaces, oilburners, pumps, transformers, nozzles, copper tubing, fittings and similar equipment.

Crotty Distributing Todd Oilburner Line

ANNOUNCEMENT has been made of the appointment of the Crotty Co., Inc., Flushing, N. Y., as exclusive franchise distributor for the oilburning line of the Combustion Equipment Div., Todd Shipyards Corp. The equipment includes rotary, mechanical and atomizing oilburners and will be handled by Crotty in the boroughs of Manhattan and Bronx, New York City.

Michael C. Crotty is president of the company, which owns and controls patents on the Crotty Water Wall Furnace Extension, a means of adding capacity and efficiency to a boiler. The Crotty company also operates its own modern tank and boiler plant in Flushing.

Giffords, Inc. Celebrates Its Twentieth Anniversary

ON AUGUST 15 Giffords, Inc., Flushing, N. Y., dealer, completed twenty years in business, and marked the occasion with a letter from William Giffords, president, to each of its customers. The firm is a Delco-Heat oilburner dealer and also operates its own fueloil delivery trucks.

In his letter to the customers Mr. Giffords emphasized the constant effort his company exerts to provide the best service at lowest cost and concluded by saying ". . . we do want you to know how grateful we are for your constant support and further to promise you that at all times in the future we will continue, and better where possible, those policies which have given us your good will."

Sid Harvey Issues Fall Edition of Catalog

A REVISED edition of "Sid Harvey's News," catalog of "Parts to make sick burners well," has been issued by Sid Harvey, Inc., Valley Stream, N. Y. Consisting of 175 pages, more than a thou-

QUIET HEET Means MORE PROFIT For You!

The World's LOWEST PRICES *plus* TOP QUALITY *plus* GREATER DEPENDABILITY *mean* EASIER FASTER SALES

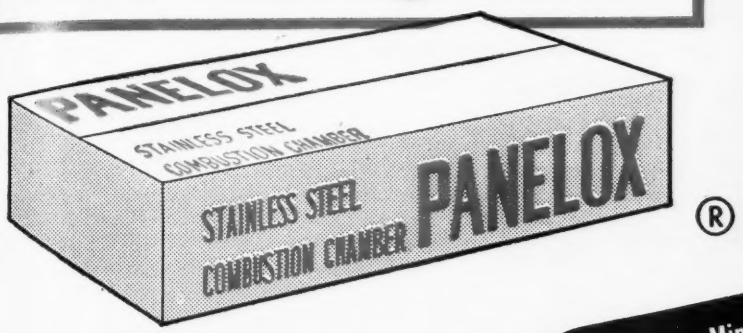
QUIET HEET'S BETTER VALUES Are Your Best SALESMEN

Inquire About Our Profitable Sales Offer

QUIET-HEET MANUFACTURING CORPORATION

135 N. J. RAILROAD AVE., NEWARK 5, NEW JERSEY

Easiest Package to sell in the Oil Heating Field!



®

...Easiest to install too!

Yes, sir—the easiest way to pick up those "extra profit" dollars right now is to push—

Installed in Minutes
Heats up in Seconds
Stands up for Years

PANELOX

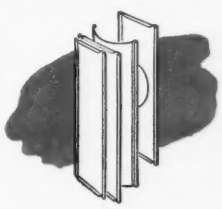
STAINLESS STEEL COMBUSTION CHAMBERS

- Every home owner will listen any time to proved fuel savings of 10% to 25% with PANELOX.
- Every housewife will go for the cleaner, quieter home-heating PANELOX assures.
- You'll like the easy sales, low installation cost and extra profits PANELOX brings in.

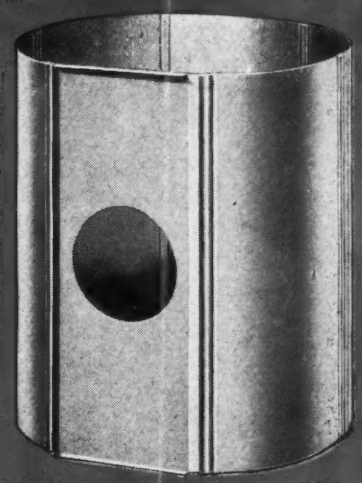
Write, wire or phone today for full details, prices and dealer proposition on PANELOX —the *sensational tested* and *proved* development in stainless steel combustion chambers.

Easy to install. No backfill, no cementing, no tools, no need to remove old chamber.

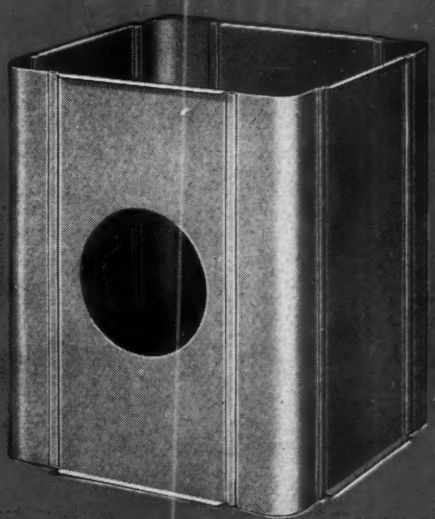
Four thicknesses of metal at interlocked seams—provides extra strength, rigidity.



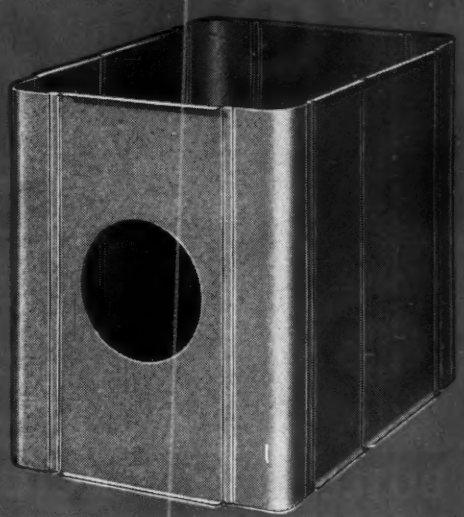
Panels made in several widths for easy fitting to a wide range of chamber dimensions.



ROUND. "A" SERIES. New design! New flat port panel for easier sealing of burner gun—reinforced with top and bottom flange. Seams strengthened to prevent warping.



SQUARE. "S" SERIES. Reinforcing flange on flat panels. Rounded corner panels permit perfect flame pattern.



RECTANGULAR. "R" SERIES. Provides more combustion area in narrow fireboxes. Easy to fit any size or shape firebox.

STEFCO STEEL COMPANY

HEATING EQUIPMENT DIVISION • MICHIGAN CITY, INDIANA

sand illustrations and prices of each of more than 800 parts on which the firm offers an exchange or rebuilding service, the catalog shows replacement parts for any make of oilburner, even special and obsolete models. Shown also is a line of service and installation tools and materials.

Service and engineering data incorporated includes such information as how to change a pump from single to double line operation, a nozzle size calculator, control comparison table and wiring diagrams.

The catalog is priced at $2.00, but it is offered to trade without charge when request is submitted on the firm's letterhead.

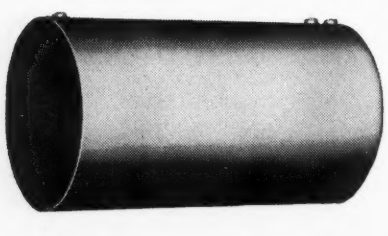
Davisbilt Products Expands Sales Outlets

AN AGREEMENT has been reached between Highway Trailer Co., Egerton, Wis. and The Davisbilt Products Co., Cincinnati, Ohio, whereby Highway branches and distributors will handle Davisbilt trailer tanks. Thomas A. Gagan, executive vice president, points out that the new outlets are situated ideally to serve contract haulers and jobbers, augmenting the coverage of regular Davisbilt distributors serving both major and independent oil companies.

Davisbilt tank engineers are conducting an intensive technical training program for Highway personnel and because of the degree of technical skill required, a policy has been adopted for all engineering and manufacture of tanks to be done in the Cincinnati plant.

BUTLER FUEL TANKS FOR EVERY PURPOSE

★ Prompt Delivery
★ Highest Quality
★ Long-Life Construction



ELEVATED FARM FUEL TANKS—300 and 500 gallon capacities with sturdy steel frame, skids and barrel rack. Equipped with hose, nozzle, shut-off valve, fill cap and gage.

BASEMENT FUEL OIL TANKS—Easy to handle. Quickly installed. 275 gallon capacity. Welded-on lugs for 1¼" pipe legs. Hard, oven-dried finish.

STORAGE TANKS—For aboveground or underground service station or bulk storage. Butler's conveniently located plants provide a complete line of storage facilities for petroleum products.

Give your customers the finest in safe, quality-built tanks. Always specify Butler. Mail coupon for complete information.

BUTLER MANUFACTURING COMPANY

KANSAS CITY, MO. • GALESBURG, ILL. • RICHMOND, CALIF. • MINNEAPOLIS, MINN.

Address all inquiries to: 7317 E. 13th St., Kansas City 3, Mo.
917N Sixth Ave. S.E., Minneapolis 14, Minn.

Send information on:
☐ Elevated Farm Fuel Tanks
☐ Basement Fuel Oil Tanks
☐ Storage Tanks

NAME_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

Deep Rock Oil Jobbers to Help Formulate Company Policies

LATEST DEVELOPMENT in the program of Deep Rock Oil Corp., Chicago, to put Deep Rock jobbers in business for themselves is the naming of jobber-elected Contract and Merchandising Committees through which jobbers will have a strong voice in these policy decisions.

Contracts still are to be written in the program and the eleven-man contract committee, moderated by Tom B. Murphy, Deep Rock's general manager, light oils division, will aid in their preparation. To represent jobbers in formulating merchandising and advertising policies will be a committee composed of one elected jobber and the area sales head from each of Deep Rock's areas. C. W. Dyniewiecz, manager of the company's merchandising department, will be moderator.

United Air Heater Appoints National Sales Representative

APPOINTMENT of an exclusive national and international sales representative has been announced by United Air Heaters, Inc., Seattle, Wash., who recently introduced a line of wall and floor furnaces and hiboy furnaces, fired with a Down-Flame burner. Harold Winningham and Co., Seattle 1, Wash., will handle sales of the line and will appoint additional representatives and make exporting arrangements.

Equipment manufacturers are offered licenses by United Air Heaters, covering either the use of the Down-Flame burner alone, or of the combined burner and unit designs. Northwest Foundry and Furnace Co., Portland, Ore., already is in production of a floor furnace under this arrangement.

IT PAYS

to recommend and install

Klemm
FUEL OIL FILTERS

Equipped with CHEMISTONE
the original Controlled Porosity Element

MODEL FF 430G
with "Hi" Tensile glass bowl.

On every service call, make it a point to suggest a Klemm Fuel Oil Filter as the best way to insure an *uninterrupted* flow of oil to the burners. *It traps dirt, sediment, water and other foreign matter.* All your customers need this protection. Klemm Filters are low-priced, dependable and highly efficient. You profit on each sale *and eliminate the cause of many unnecessary emergency calls.*

There are other filters but none with *Chemistone!*

HERE'S WHY KLEMM CHEMISTONE FILTERS SELL FASTER

Streamlined . . . lots of eye appeal—a carefully designed filter that looks right with the finest installation.

Engineered . . . Scientifically engineered to give 100% filtration under all conditions. Easy to clean—no tools or wrenches needed.

Packaged Right . . . Put up in dealer cartons of 12 each or, assorted. Stocks easily . . . ships safely.

Priced Right . . . Superior in action, it's priced for quick sales. You'll find it doubly profitable to push Klemm filters.

NOW A CHOICE

MODELS FF 430G, FF 401G with "Hi" Tensile glass Bowls
MODELS FF 430*, 401* with metal bowls

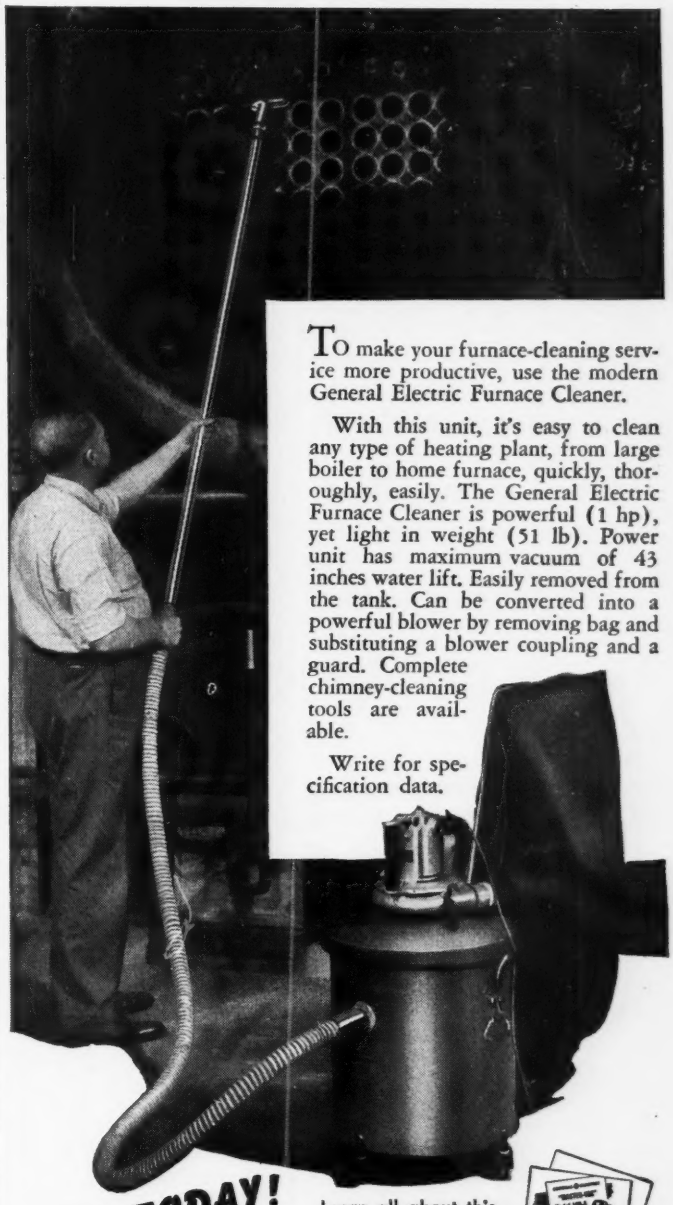
*listed for reinspection with Underwriters Laboratories

Write today for full information!

Klemm
AUTOMOTIVE PRODUCTS COMPANY

1718 Damen Avenue **Chicago 47, Illinois**
Export Division: Guiterman Co., Inc., 35 S. Williams Street, New York 4, N.Y.

It makes furnace cleaning a good business!

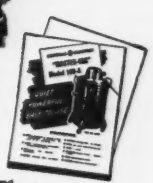


To make your furnace-cleaning service more productive, use the modern General Electric Furnace Cleaner.

With this unit, it's easy to clean any type of heating plant, from large boiler to home furnace, quickly, thoroughly, easily. The General Electric Furnace Cleaner is powerful (1 hp), yet light in weight (51 lb). Power unit has maximum vacuum of 43 inches water lift. Easily removed from the tank. Can be converted into a powerful blower by removing bag and substituting a blower coupling and a guard. Complete chimney-cleaning tools are available.

Write for specification data.

SEND TODAY! Learn all about this powerful, speedy unit—built to General Electric standards of performance and durability.



Furnace Cleaner

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Dept. 22-1615
1285 Boston Ave., Bridgeport 2, Conn.

Without obligation, send descriptive literature on General Electric Furnace and Boiler Cleaner equipment.

NAME.....

FIRM.....

ADDRESS.....

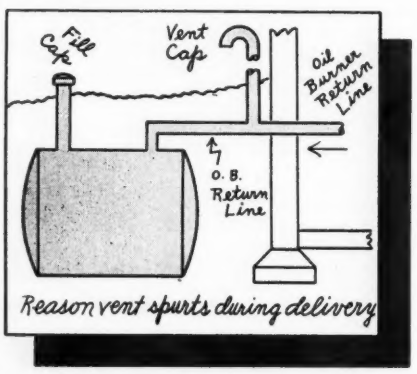
CITY..... STATE.....

Everyday Snags

Oil Delivery Trouble

A few outside tank installations give fueloil suppliers headaches by spurting oil from their vent caps when a delivery is made in the usual manner. Checking on this after his oil company had been put to the expense of replacing shrubs and painting the outsides of customers' houses, one executive became discouraged when his notes proved that the trouble jobs gave trouble only once in a while. Oil was delivered uneventfully six times to one house, for example, but during the seventh delivery two or three gallons sprayed out of the vent cap and did damage. The executive wondered then if, instead of being caused by the characteristics of a certain few tank installations, the vent geysering might not break out from any tank that happened to feel capricious when a load was being delivered.

The appearance of such a geyser from the vent cap, occasionally when oil is being delivered, depends however not on the job's capriciousness but on the manner in which the vent line is connected to the tank. With the vent line that runs up the side of a house connected to a tee in the oilburner return line as the accompanying diagram shows it, fueloil will spurt from the vent cap if the



Reason vent spurts during delivery

burner happens to be running when the oil is delivered. Although in the past this type of vent piping has been shown in oilburner installation manuals and in at least one textbook, it is wrong. Besides causing the oil delivery trouble, it fails to come up to the requirements of the National Board of Fire Underwriters. It is used by certain burner dealers to cut installation costs because to put the tee for the vent line in the burner's return line is much cheaper, where an outside tank is 50 ft. from a house for example, than to run a separate vent line 50 ft. from the tank to the house. Although according to most authorities the vent line should be of 1¼" pipe, matters generally are made worse because the cheap vent arrangement is connected to a return line made up of ¾" or smaller pipe.

The use of this shoddy tank venting arrangement on some of their customers' tanks is the reason some oil companies have a rule that the truck driver must turn off a customer's oilburner before delivering fueloil. As they don't know about improper vent connections, many fueloil company employees wonder why that rule ever was made.

Piped as the diagram shows a vent spurts oil during a delivery because while air vented from the tank rushes into the left-hand side of the tee at the bottom of the vertical vent line, oil being returned from the burner pours into the right-hand side of this tee. The rush of air up the vertical pipe to the vent cap carries the returned fueloil up to the cap.

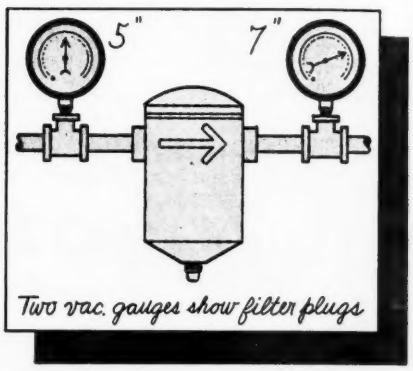
Although this runs up a sizable bill for piping, the owner of an installation with this venting shortcoming should have a separate vent line run to the tank to make the job right. A spill of oil from his improperly connected vent really can't be charged up to the company delivering the fueloil.

Facts On Oil Filters

Burner owners often ask how often their special oil line filters, installed perhaps to keep low gph nozzles clean, need cleaning or replacement of their throwaway elements. A burner dealer can answer by making a good guess, by referring to the best information obtainable on the subject including the advice of filter manufacturers, or by obtaining first hand information on the subject.

First hand information is good because it takes into account the amount of plugging material given the filters by the fueloil delivered in the particular locality, besides taking into account the characteristics of the particular make and model of filters, and the amount of oil a customer uses a year.

To obtain first hand information easily, equip a few outside tank installations with the vacuum gauge arrangement shown in the diagram. Pressure burner jobs with return lines serve best for testing typical filters. The filter in the diagram is in the suction line of the burner, of course. On each side of it is a vacuum gauge screwed into a pipe tee.



Two vac. gauges show filter plugs

Always run the burner when you read the vacuum gauges. Keep a slip of paper on the job and make note of the readings when the filter is clean as new. Then take a set of readings every month or every second month. The two gauges will start to give decidedly different readings as the filter starts to plug. You may decide that a filter needs attention when one gauge gives a vacuum reading two or three inches higher than is given by the other gauge, and is hopelessly plugged when one gauge reads five inches higher vacuum than the other. By keeping notes on the amounts of oil used by your guinea pig installations, and on the names of the companies supplying the oil, you can gather excellent information regarding how fast the filters plug.

It's the difference in the readings of the two gauges that counts, not the reading of either gauge. Both gauges give higher readings when the oil storage tank is nearly empty, and lower readings for a full tank.

No Label On Boiler

A service man reports on using a thumb rule published in FO&OH to the effect that, encountering an old boiler that lacks a name plate, you probably can obtain approximately the rated output from it by firing 1.0 gph for every two square feet of grate area in the boiler.

This boiler, 35 years old, was found to have grate dimensions 30" x 72", which figured out as 15 sq. ft. of grate area. The thumb rule led to installing a firebox sized for 7.5 gph. Fired at this

REX RoTo

COMBUSTION CHAMBERS
ARE QUICKLY and EASILY INSTALLED

No Cementing, Cutting, Fitting, or Waste Materials

Rex Roto Vertical Combustion Chamber, with Rex Roto Baffle installed

The Rex Roto Horizontal — Rectangular Combustion Chamber

QUICK SURFACE TEMPERATURE

in any style furnace, with any make burner

Plus . . .

Instant COMBUSTION EFFICIENCY

Immediate SAVINGS

Write today for more complete information

With

REX RoTo COMBUSTION CHAMBERS

PATENTED

REX CLAY PRODUCTS CO.

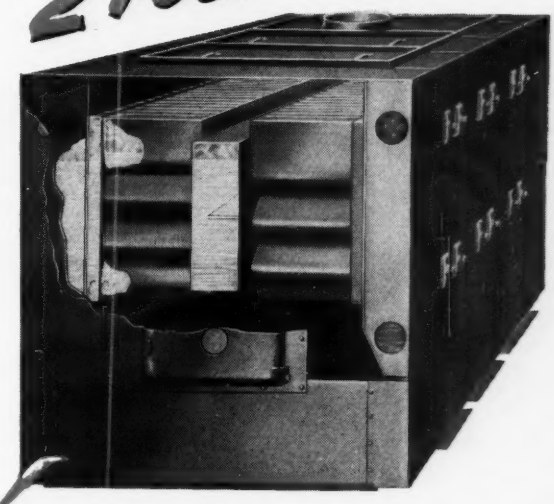
14414 Dexter Boulevard **Detroit 6, Mich.**

Albany, N. Y., Branch: 68 Tivoli St.

FOR THE LARGE INSTALLATION

THE ONLY SECTIONAL STEEL BOILER THAT CAN BE

taken through a 2 FOOT DOOR!



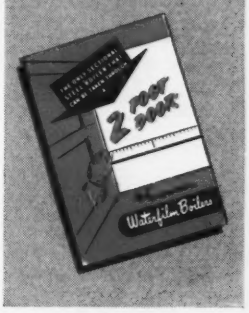
Koven

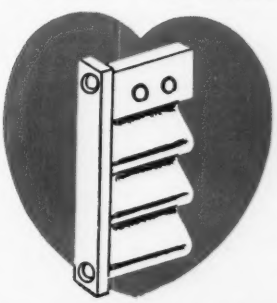
WATERFILM BOILERS

Throughout the country, many apartment houses, industrial plants and other large buildings have found vast savings were made possible by the Waterfilm Sectional Boiler because it could be installed with a minimum of time and labor. And its patented construction (incorporating the exclusive zig-zag water tube) insures quick heat and economy! Waterfilm, in models and sizes for small homes as well, is recommended by leading architects and builders. Write for free literature and newspaper mats. NATIONALLY ADVERTISED.

NO EXPENSIVE RIGGING OR ALTERATION COSTS!

SEND FOR FREE BOOKLET





The heart of the Waterfilm Boiler is the zig-zag shaped water tube.

MADE FOR AUTOMATIC FIRING WITH OIL, STOKER OR GAS

WATERFILM BOILERS, Inc.

A Division of L. O. Koven & Bro., Inc.
154 Ogden Ave., Jersey City 7, N. J.

rate, the boiler gave 825° stack temperature at first, with 8.5% CO_2. Baffling the flues carefully reduced the stack temperature to 690°. Either because the thumb rule is only approximate or the boiler on this job was carrying a light load for its size, the boiler seemed to be fired too hard for the load. Reducing the firing rate to 6.0 gph produced the pleasingly low stack temperature of 540° and gave the service man the steady burner run of two to three hours which he wanted on coldest mornings when the clock thermostat started the burner.

Emergency Electricity

If you can gather together enough wire to reach, you can obtain electricity from a nearby home or building when there's no heat in a house because the lines to the house have gone dead.

The lines to a small movie theatre failed last fall. The power company men, working on the trouble, promised a normal supply of electricity by 15 minutes before show time, but the movie house had gone cold because of the power failure and much more than 15 minutes of burner operation was needed to heat it enough for the show to go on. After the theatre owner disconsolately told this to the service man who had discovered the power failure when he arrived to answer a no heat call, the service man dashed off, returned with a few hundred feet of #14 insulated wire, and ran this from a light socket in a nearby store to the fuse box of the oilburner. With the warm air furnace giving plenty of heat, the show went on . . . thanks to the best in oilburner service work.

Boiler Underloaded

He could not figure out, because of oddities in the radiators and water heating arrangements, how much load this boiler was carrying. But the service man could answer the owner's question about how many more feet of standing steam radiation the boiler could carry easily. The boiler was carrying the existing load nicely when fired 2.75 gph. The stack temperature was low, so the service man tried one larger nozzle after the other until, firing 4.0 gph, he obtained 700° stack temperature, which was the maximum he considered suitable for the boiler. According to his way of thinking, on this job each additional 1.0 gph could carry additional load of 400 sq. ft. of standing steam radiation, so the additional 1.25 gph would permit the boiler to carry 500 sq. ft. more load. As the service man may have been stretching things a little, fortunately the owner had in mind only 360 sq. ft. of additional load. After a larger firebox fired by a 3.5 gph nozzle was installed, the greater load was carried nicely.

Hot Water Thumb Rule

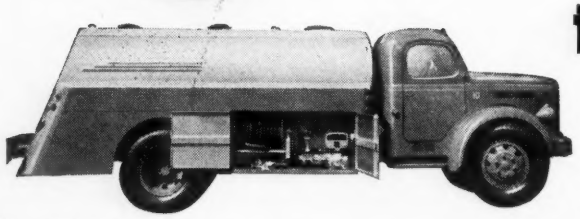
Starting with all the water in a hot water storage tank heated to 160°, usually 50% to 60% of the water can be drawn from the tank rapidly and continuously before the temperature at the hot water faucet drops to 125°; and 125° can be considered rock bottom for satisfactory hot water supply.

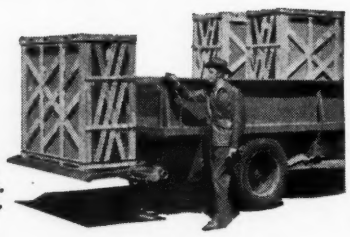
The reason you can't draw 40 gallons of extremely hot water, for example, from a 40-gallon tank that's heated fully to begin with is, of course, the mixing of cold water entering the tank with the hot water stored in the tank.

Heil Trailerized Petroleum Transport Tanks. Capacities 4100 - 6000 gals. Single or tandem axle.

HEIL Quality PRODUCTS

It Costs Less, Now
to Haul Petroleum Products


Heil Truck Tanks. Capacities 800 to 2100 gals.


Heil Elevating Tailgate raises and lowers 2000-lb. loads quickly and easily.

The advanced design of HEIL equipment brings about unusual operating economies

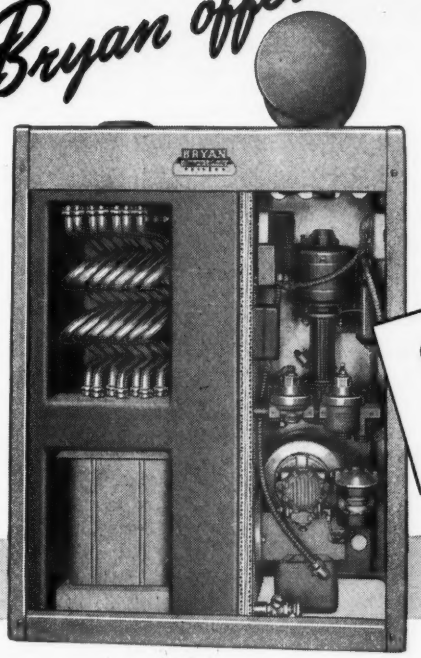
Heil built the first frameless petroleum transport . . . the first one-piece, all-welded boltless truck tanks . . . the kind of equipment that lets you haul bigger payloads at lower costs.

This advanced design can help you make larger profits. Write today for bulletins that show why.

THE HEIL CO.
DEPT. 999—3039 WEST MONTANA STREET, MILWAUKEE 1, WISCONSIN

T-247

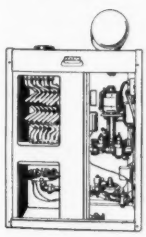
Bryan offers



A Completely PACKAGED BOILER

designed for radiant heating of small homes and apartments

CLOSED



OPEN

- Measuring but 31" wide, 41" high and 18" deep, it delivers 70,000 BTUs. Also 100,000 BTU size available.
- Green hammerloid finish.
- Oil or gas firing optional.
- Light in weight.
- High efficiency copper tubes.
- Easily installed—all wiring, piping and controls assembled at factory—ready for use after connecting to water, mains, electricity and fuel lines.

Built to ASME specifications. Send today for complete information.

BRYAN STEAM CORP.
589 Chili Pike • Peru, Indiana

BRYAN
Copper Tube
BOILERS

Waterbury
Florence RANGES AND HEATERS
Glenwood
CLEVELAND Toridheet OIL BURNERS
Monogram RANGES AND HEATERS
HART OIL HEAT

ON THE *Finest* HEATING EQUIPMENT

field

CONTROLS THE DRAFT

***field* CONTROLS BRING OUT THE FINEST IN EVERY HEATING PLANT**

Today, Field Controls are first choice with manufacturers of oil-fired heating equipment. And this preference is based in every case on the manufacturer's own rigid and exhaustive tests. Each test has proven that Field is the most accurate, most dependable, most "saleable" draft control made. The reason is Field's famous, patented design features: *"Rocking Chair"* gate and pivot action, to reduce friction, increase sensitivity; *Off Center Gate Mounting* which provides a larger effective area for draft action; *Side Wings* for closer air volume control; *Extended Housing* which places the gate outside the reach of fouling, warping soot and heat. Only Field has all these features, and only Field enjoys unqualified acceptance by manufacturers, dealers and consumers.

WRITE for full details on the complete Field Barometric Draft Control line—for greater fuel economy, longer heating plant life, greater customer satisfaction.

FIELD CONTROL DIVISION
H. D. CONKEY & COMPANY MENDOTA, ILLINOIS

AFFILIATES: CONCO MATERIALS HANDLING DIVISION *CRANES—HOISTS*

field REGISTERED

AFFILIATES: CONCO BUILDING PRODUCTS, INC. *BRICK—TILE—STONE*

BAROMETRIC DRAFT CONTROLS

Many of the automatic washing machines take from 12 to 20 gallons of hot water per load of clothes run through them. Housewives who have 40 or 50-gallon tanks hopefully start out on wash days intending to run through their automatic machines three batches of clothes. Excellent clothes washing depends on being able to wash with water as hot as 160°. The outcome of coupling these facts is poor washing, often first blamed on the washing machine and later rightfully blamed on insufficient hot water.

Abusing Tankless Coils

You can't expect to obtain five gallons-per-minute of hot water heated from 50° to 150° by hooking a 5 gpm tankless water heater to a heating boiler fired 1.25 gph. One dealer's been trying this in the homes of a building development. Other dealers are trying what amounts to the same thing but with different numbers involved.

When the hot water runs cool, these dealers make the mistake of wishing the tankless coils were larger. Installing larger coils would not help, because the trouble lies in trying to take heat out of the boilers at a much higher rate than heat is put into them by the flames. In some cities, tankless coils are getting a poor reputation because of the mistakes, related to this erroneous thinking, which burner dealers are making.

"Would you mind repeating the part that comes between 'Dear Sir' and 'Yours truly'?"

Take the case of the dealer who wants to work a 5 gpm tankless coil at its maximum output. The 5 gpm amounts to 300 gallons of water per hour, to put the thing on an hourly basis. To heat one gallon of water from 50° to 150° takes about 830 Btu's, therefore to heat 300 gallons over this range takes 249,000 Btu's per hour (simply multiply 830 by 300 to get 249,000).

To carry this water heating load of 249,000 Btu per hour (without carrying any house heating load at the same time) would take a firing rate of 2.5 gph with an overall boiler-burner efficiency of 70%, as at this efficiency one gph gives about 100,000 usable Btu's per hour for each one gph fired.

True, to use an oversize tankless coil helps him somewhat in solving his problems. Yet this dealer expects 5 gpm of hot water from a heating boiler fired 1.25 gph, whereas to provide enough Btu's for heating 5 gpm of water from 50° to 150° requires firing a boiler at 2.5 gph.

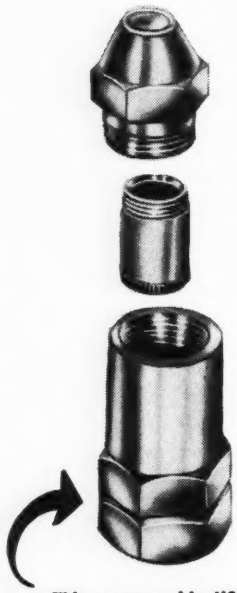
Where the heating boiler chills when large amounts of hot water are drawn from a tankless coil, you simply are taking from the boiler more heat per minute than the flame is putting into the boiler. You can't expect a long, steady draw of 5 gpm, or even 3 gpm, of 150° hot water from the tankless coil in a boiler fired only 1.0 or 1.25 gph.

Nursing A Dry Steam Boiler

This has been said before, but seemingly not often enough. Owners of steam boilers not fitted with feeders and low-

Now!

LOWER PRICES on DELAVAN Balloffet Design NOZZLES



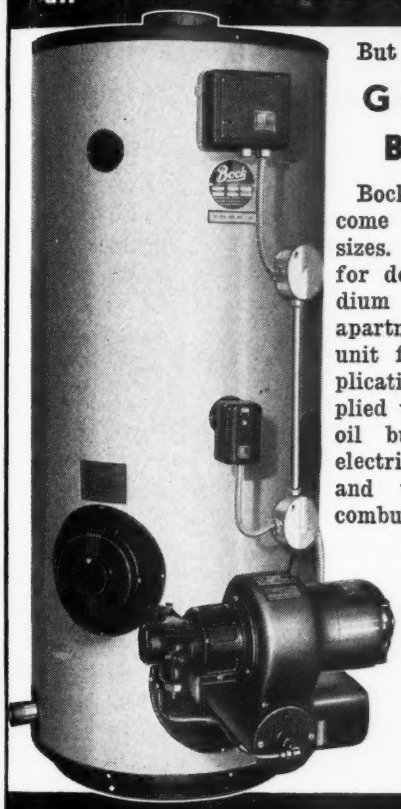
You can now buy the finest Balloffet design nozzles, strainers and adapters at lower than pre-war prices. These savings are your dividend on our improved manufacturing methods and increased volume. Higher quality, greater uniformity and accuracy of rating assure better performance. For the highest quality nozzles at a new low price—specify DELAVAN. Write for new low prices.

This groove identifies Delavan Adapters. Precision made to assure perfect fit and eliminate leakage. Now at reduced prices.

DELAVAN ENGINEERING CO.
Established 1937
DES MOINES 9, IOWA

OHI

Sell an **OIL WATER HEATER**



But be sure it has a

GUN TYPE BURNER

Bock Water Heaters come in three popular sizes. A 30 gal. model for domestic use. A medium sized model for apartments and a large unit for heavy duty application. They are supplied with or without the oil burner. Come with electric wiring in place and with a removable combustion chamber

★ *Reliability*
★ *Satisfaction*
★ *Repeat Sales*

Water Heater Headquarters

BOCK Corporation, Madison, Wisconsin

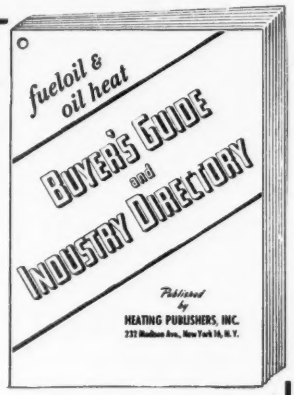
the BUYER'S GUIDE

will be ready about

OCT. 1st

more than

6,500 LISTINGS



$2 a copy

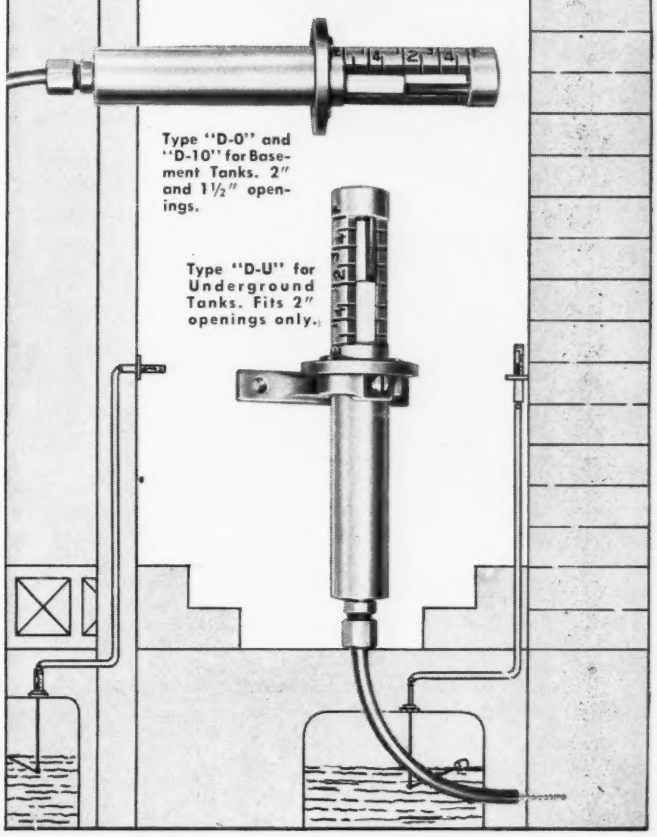
THE BUYER'S GUIDE, directory of your industry, tells you where to buy anything oilheating men require. It's thoroughly cross-referenced. It contains more than 6,500 listings of 1,152 manufacturers, 14 general classifications, 58 subdivisions. Highly useful, year-round source of information.

1,152 MFRS.

HEATING PUBLISHERS, INC.
232 MADISON AVE., NEW YORK, 16

Sentry AT-A-GLANCE
REMOTE READING
Tank Gauges

For accurate, easy reading of tanks — indoors, outside or underground.



Simple, Inexpensive, Dependable
Easy to Install Gauges for every use

Long wanted — long needed. Sentry now brings you remote reading gauges that accurately indicate correct liquid level at all times. Accuracy not affected by changes or variations of specific gravity of oil. Can be installed with or without additional gauge on tank for dual location reading. No unnecessary fittings, bulbs or levers for oil man to tamper with . . . no need for access to building. Stainless steel and brass extension lines—cast aluminum, weatherproof thermometer type indicator, calibrated in fractions. Easy to read — unconditionally guaranteed. Write for descriptive folder showing complete line.

KRUEGER *Sentry* GAUGES
GREEN BAY • WISCONSIN

water controls should be warned that, when found dry with the burner running, a red-hot steam boiler must not be given water right away. It's smart to fight off the natural tendency to give water immediately to the boiler because it needs water badly, as following this tendency is almost certain to damage the boiler.

On finding a boiler dry with the burner running, turn off the burner main switch, then open the firing and flue doors of the boiler to cool it. Wait at least an hour or two before feeding water to the boiler. You should wait until all parts of the boiler are so cool that you can place your hand on them without burning yourself.

"What do you mean - you'll be working late at the office? You're on vacation, remember?"

Give this advice whenever you encounter an operator or owner of an unprotected steam boiler because, for need of this knowledge, each year many steam boilers are damaged after they have run short of water.

Don't fail, at the same time, to give the boiler owners complete details on modern automatic water feeders and low-water controls. One good way to protect yourself against being blamed for damage to steam boilers is to make certain to send a letter to each of your customers who owns an unprotected steam boiler. State in the letter that you do not consider the boiler safe without the protective devices you are recommending for it.

◈

Dr. Alfred Otto C. Nier, first man to isolate uranium 235, has been engaged by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., on a consulting basis. The board of regents, University of Minnesota, where he is a physics professor, has permitted Dr. Nier to work for the company on research and engineering problems, including those in connection with automatic control instruments. He currently is assisting in research work on mercury switches.

Charles H. Wartman has been named manager of the marketing department, General Petroleum Corp., Los Angeles, Cal., in one of a series of promotions to be effective July 1. Other advances saw *Baxter F. Ball* assume Mr. Wartman's former position of assistant to the vice president in charge of marketing and *Everett M. Gray* go to the company's San Francisco headquarters to replace Mr. Ball as manager of the marketing department's northern California Division.

John G. Kirkpatrick, Pittsburgh, Pa., recently was named representative for Kieley & Mueller, North Bergen, N. J. He will represent the firm in Pennsylvania, West Virginia and Ohio.

Georges Roudanez has been named manager, Combustioneer Div., Steel Products Engineering Co., Springfield, Ohio, to direct all sales activities of Combustioneer stokers and humidifiers.

Samuel O. Southard has become acting district sales manager for Sun Oil Co. at Reading, Pa. Former wholesaler distributor representative for Sun's Middle Atlantic Region, he succeeds Marshall C. Edmunds, resigned.

R. A. Dooley has been appointed division manager east of the Rockies for Coroaire Heater Corp., Cleveland 15, Ohio.

PEERLESS FOUNDRY CO., Indianapolis 7, Ind., discusses Oil Master winter air conditioning units in a 4-page folder. Along with a specifications table, containing data on four models, is a cut-away view of a unit showing construction and interior arrangement of parts. Fired with a gun type oilburner, the line is described as adequate for installation in homes ranging from bungalow to large ranch-type houses. Register capacities are listed as 80,000 Btu for the smallest size, 160,000 for the largest.

HOFFMAN SPECIALTY CO., Indianapolis 7, Ind., in catalog No. 149 pictures and describes its line of hot water, steam and warm air heating specialties. Covering a line of valves, float and thermostatic traps, the catalog includes specifications and dimensional data and discusses applications. Hoffman Heat Controlled furnaces, basement and utility room units, fired with vaporizing burners, are included also, along with pertinent data on control packages and systems, vacuum and condensation pumps.

Listed by Underwriters Laboratories

KRAISSL SEPARATORS

REMOVE SLUDGE AND DEBRIS
FROM DOMESTIC AND INDUSTRIAL OIL LINES

Single and Duplex Separators — both Standard and High Pressure —for light and heavy oil. You can have any practical degree of separation by simply changing the basket—no tools needed. Outside installation gives instant, easy access *without the dismantling of your burner.*

Eliminate filter replacement costs entirely — cleaning of Kraissl filter baskets restores original efficiency.

KRAISSL CO., INC.
295 Williams Ave., Hackensack, N. J.

Write for our Bulletin A-1214 today. If you have any special problems—if you need any detailed information—please write us fully. You will receive a prompt and detailed reply.

Name_____
Name of Company_____
Title_____
Address_____
City_____ State_____

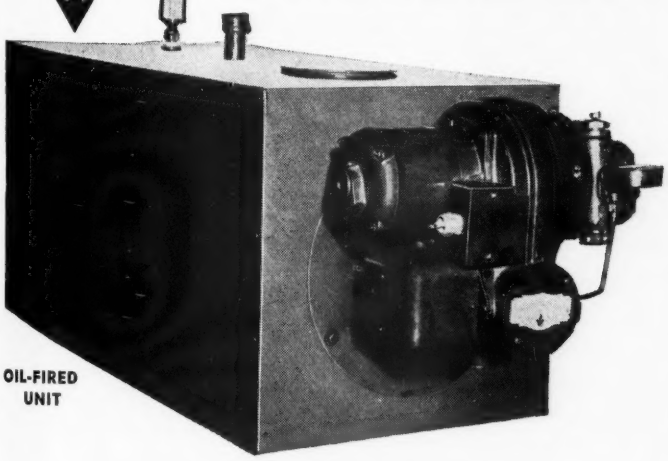
KRAISSL THE KRAISSL COMPANY, Inc.
HACKENSACK, N. J.

WINDSOR VILLAGE
Indianapolis, Ind.
Development of the
L & L BLDG. CORPORATION
SHUTTLEWORTH CO., CONTRS.

SPECIALLY PRICED
FOR

Small Homes

A new high - capacity DEWEY-SHEPARD Boiler



OIL-FIRED UNIT

Here's the first real answer to today's small-home heating problem! The new Dewey-Shepard high-capacity horizontal steel boiler is particularly well adapted for baseboard or panel hot-water heating, and priced to make this type of heating available on low-cost housing. Can be fired interchangeably with gun-type oil burner or gas-fired unit (for LP, manufactured, or natural gas). Typical installation in Windsor Village, Indianapolis—see top illustration. Maximum capacity, 70,000 Btu. Boiler proper is cylindrical and can be furnished with or without jacket. Outside jacket dimensions, 18″ wide, 18″ high, 39″ long, with burner equipment projecting. Also available: Gas- or oil-fired boilers and water heaters with capacities from 95,000 to 600,000 Btu.

Get complete specifications and prices from your Wholesaler. Or write direct to:

DEWEY-SHEPARD BOILER CO.

1311 N. CAPITOL AVE., INDIANAPOLIS 2, IND.

FACTORY: PERU, INDIANA

YOU GET THESE **6 EXTRAS**

- Modern Appearance
- Low Cost
- Less Corrosion
- Easy to Install
- Easy to Clean
- Simple to Repair

with

MAID-O'-MIST

Boiler Water Level Controls

Yes, six extras that mean a lot to the man who installs these controls. And these extras are in addition to the safer, more dependable, boiler protection.

The new 500 Series of Maid-O'-Mist Boiler Water Level Controls are compact, streamlined and light in weight (only five pounds) . . . because they are built entirely of non-ferrous metals. These controls are highly dependable because of such new features as the "approved" switch used as a circuit breaker in the low water cut-off . . . the rapid snap action of the contacts . . . the generous use of silver . . . the size of the switchgap . . . all making it possible to break large currents without pitting or sticking.

STOP
WATCHING THE WATER LINE

. . . Use Maid-O'-Mist Water Boy Controls for Safer Boiler Protection.

No. 500 WATER BOY SERIES IN FOUR COMBINATIONS

Designed for low pressure steam boilers up to 5000 sq. ft. capacity carrying 25 lbs. maximum steam pressure. Come complete with quick hook-up fittings.

No. 577 Water Boy. A combination Feeder and Low Water Cut-off for automatically fired boilers. Switch rating ¾ h.p. 110v. A.C. and 1½ h.p. 220v. A.C.

No. 567 Water Boy. Feeder only. Low water cut-off can be added later to make it identical to No. 577.

No. 568 Water Boy. A combination Feeder and Low Water Cut-off with addition of a signal light that flashes when water drops to ½″ in gauge glass.

No. 587 Boiler Guard. Low Water Cut-off only, giving same cut-off protection as No. 577 but without Water Boy Feeder.

We cannot give you an adequate word picture of the important developments incorporated in these controls. You must see them—try them. Send for catalog No. 500 Now.

MAID-O'-MIST INC.

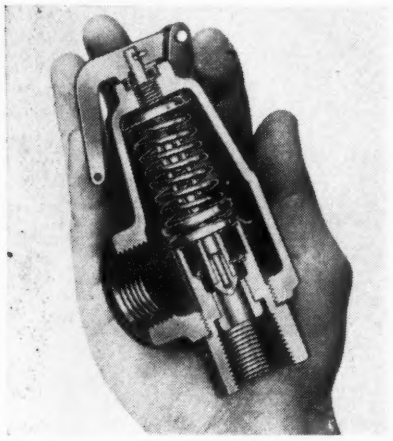
3221 N. PULASKI ROAD
CHICAGO 41, ILLINOIS

AUTOMATIC HUMIDIFIERS
FOR ALL TYPES OF HEATING SYSTEMS

New Products

McDonnell No. 33 Relief Valve For Hot Water Heating Boilers

NO. 33 SAFETY relief valve for hot water heating boilers, announced by McDonnell & Miller, Inc., Chicago 11, Ill., has



been designed to provide a valve of large capacity, Btu-rated and built to conform with the ASME boiler code. Discharge capacity is 242,900 Btu/hr, reputed to be sufficient to take care of more than 70% of all hot water heating boilers.

When the set pressure of 30 lbs. is reached, the needle of the valve lifts just far enough to discharge water at the low rate necessary to take care of the thermal expansion of the water. If for any reason temperature rises into the emergency zone, increased velocity acts on the "hydra-lift" ring, greatly increasing lifting power, and snapping the valve wide open to dissipate heat at a high rate.

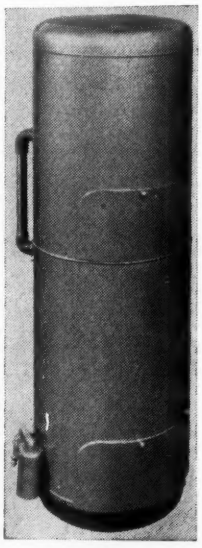
Roberts Brass No. 463 Boiler Water Gauges

NO. 463 boiler water gauges, announced by Roberts Brass Mfg. Co., Detroit 9, Mich., are designed for working pressures up to 175 lbs. and feature unbreakable aluminum wheels and a solid brass body. A self-cleaning feature keeps the lower part of the gauge, which is sized at ½" I.P., from clogging with scale.

Special packing allows free expansion of glass and leak-proof packing prevents leakage at the valve stems. Offered complete with Corning glass tubes, ⅝" x 12" and with strong guard rods, the gauges may be furnished less rods and glass.

Timken Hi-Boiler Units For Small Home Heating

HI-BOILERS, offered by Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich., have been engineered expressly for small home heating. The units combine a wall-flame oilburner, heating boiler, expansion tank and domestic water heater in an all-enclosing cabinet. Specifications for two of the Hi-Boiler models show model OBK-50B to be a copper tube heating boiler, with

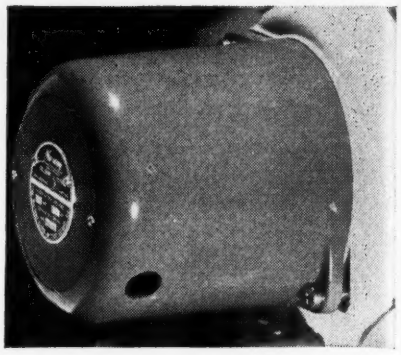


a capacity of 38,000 Btu/hr. The unit stands 65" high and is 22" square, develops 12,000 Btu capacity in its copper tube water heater. Model OBG-80B is a steel boiler, developing 68,000 Btu heating capacity and equipped with a copper tube water heater, rated at 12,000 Btu. It has the same dimensions as the smaller model.

The units are shipped complete, with a combination water heater and expansion tank unit mounted over the boiler. They have been designed especially for basementless homes, where proximity of the heating plant to living quarters makes quiet burner operation essential. The complete units are assembled, wired and piped before shipment.

Oilburner Motor Developed By The Nu-Way Corporation

A FRACTIONAL HORSEPOWER motor, specially designed for oilburner use, has been developed by the Nu-Way Corp., Rock Island, Ill. The motor, which will be used on Nu-Way oilburners, is being



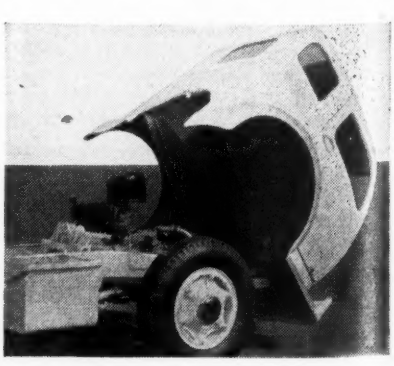
produced in a motor department at the company's factory. In addition, a sub-assembly line for winding was added to the plant operation.

The motor features simplified design and incorporates a removable cover to allow enclosure of the thermal cut-out switch inside the housing. The magnetic starting switch is accessible by removing a plate held in place with two screws. Motor housing and end bells are of sand cast aluminum, with all parts precision-machined to close tolerances. The necessity for frequent lubrication has been eliminated by providing permanently lubricated ball bearings. The motor operates at 1725 rpm and is Underwriters' approved.

White 3000 Truck Series Features Power Lift Cab

SUPER POWER 3000 series trucks, introduced by White Motor Co., Cleveland, Ohio, observing its 50th Anniversary as a truck manufacturer, represent a fundamentally new design. Most striking innovation is a power-lift cab, whereby a turn of a key lifts the cab by an actuating mechanism similar to that used on transport planes to operate the landing gear. With the cab lifted, all component parts of the 3000 chassis, from the front end back to the body, are accessible at convenient bench-height.

The series, three models of which are now in production with options making



them adaptable to a wide range of truck services, feature also shorter-wheelbases, and turning radius and provide a curb-level step and roomy cab clearances. At the wheel the driver is afforded greatly improved vision in all directions. The forward position of the cab permits a load distribution with more of the weight carried on the front axle. A heavier capacity front axle is used, which, coupled with the shorter wheelbase and overall length, makes the 3000 extremely maneuverable and easy to park in restricted areas. The cab structure is bonderized and the vehicle is engineered to enable incorporation of major developments in engines, transmissions or other units.

Silver-Flame Ceiling Unit Available in Two Models

TWO MODELS and ten sizes of ceiling-suspended oilfired furnace units are offered by Silver-Flame Industries, Inc., Detroit 16, Mich. The units are fired with high pressure atomizing oilburners and are shipped completely assembled and wired. Both models are equipped with stainless sheet combustion chambers and are furnished with Field draft regulators.

Capacities range from 80,000 to 300,000 Btu/hr output, with warm air openings measuring 10" x 12" for the smallest size, 14" x 27" for the largest. Five sizes of model P units employ propeller fans for air circulation, while the model S units are equipped with variable speed blowers.

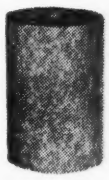
Althoff Circulating Heaters Designed For Use In Kitchen

OILFIRED circulating heaters, available from L. A. Althoff Corp., DeKalk, Ill., are designed to match up with gas or electric ranges for the purpose of heating the kitchen. Models are available fired with double-pot burners or two sleeve type burners. Both types may be furnished with an automatic electric pump for oil feed from a remote storage tank or with removable storage tank. Two 8" Breese burners are used in the pot type model and two 6½" Lynn burners fire the sleeve type model.

The heaters feature a return flue, which, when a lever is pushed, forces the flue gas to travel along the sides to the front of the heater, then under the

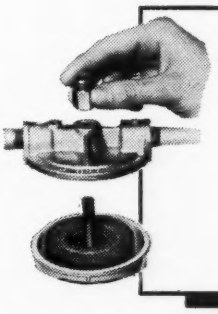
ALL YOU NEED NOW to Filter Any Domestic Oil Burner IS A CUNO FILTER

One model Cuno MICRO-KLEAN Oil Burner Filter handles any installation using domestic fuel, from the smallest cottage to the largest public building. Straight line pipe connections.



ALL YOU NEED NOW to Service an Oil Burner Filter IS A CUNO CARTRIDGE

One standard MICRO-KLEAN cartridge fits any MICRO-KLEAN filter—only one size to lug to the job. Cuts down inventory, too.



ALL YOU NEED NOW for 60-Second Service IS A CUNO FILTER

Removing a single nut on the MICRO-KLEAN filter loosens housing cover for 60-second cartridge replacement.

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS' LABORATORIES, INC. OF

ALL YOU NEED NOW to Insure User Satisfaction IS A CUNO FILTER

MICRO-KLEAN cartridges give your customers better service because they will not channel, they last twice as long and hold twice as much dirt.

To insure customer satisfaction and save installation time . . . ask your jobber about Cuno MICRO-KLEAN Oil Burner Filter Model 1C1.

FOR FREE BULLETIN, ATTACH COUPON TO YOUR LETTERHEAD

CUNO

OIL BURNER FILTERS

Easier to Stock . . .
Easier to Service

Cuno Engineering Corporation
856 South Vine St., Meriden, Conn.

Please send information on Cuno MICRO-KLEAN Oil Burner Filters and replacement cartridges.

Name.....

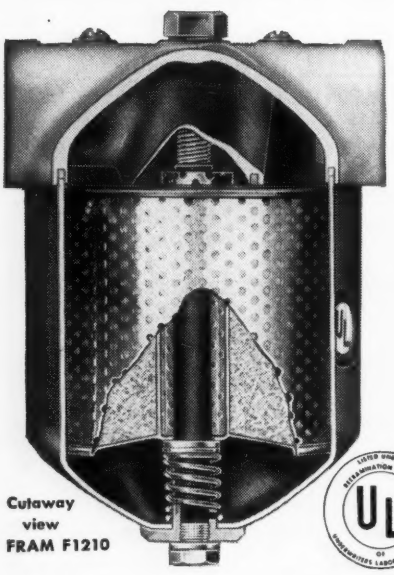
Title.....

Company.....

Address.....

NEW FRAM FUEL OIL FILTERS

Cut Service Calls
Build Satisfaction
Make Repeat Profits



Cutaway view FRAM F1210

Filters the oil clean through an entirely new development • Removes dirt, rust, scale, water • Assures steady flow of clean oil to the burner • Protects pump valves and nozzles • Reduces service expense and needless, troublesome calls • Easy to install • Replacement cartridge builds repeat profits • Available in capacities of 2000, 4000, 6000 gallons of oil consumed per year.

FRAM CORPORATION
Providence 16, R. I.

Headquarters for

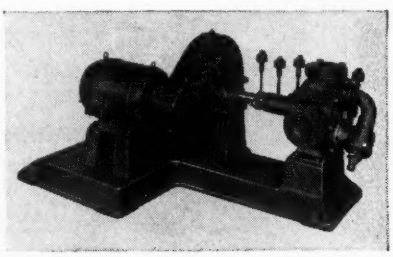
FRAM OIL · AIR · FUEL FILTERS

top and to the rear. This also heats the unit's French plate top if it is desired to use for cooking. Hot water heating coils may be added.

Viking Enclosed Pump For Outside Operation

MODEL Q162 pump, announced by Viking Pump Co., Cedar Falls, Ia., has a capacity of 200 gpm and is built to operate outdoors without protection. A totally enclosed pump, gearing and motor permits this type of installation.

The unit features new oil-tight, cast iron gear case with bullseye sight gauge, filler and drain plug and a combination flange and foot type radial bearing to support gear case and pump shaft. A new streamlined base, motor rails and single gearing were designed to accommodate Nema frame motor up to 15 hp, 1750 rpm. A stainless steel pump shaft

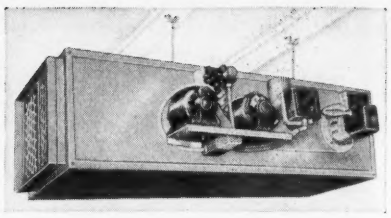


and five ball check grease cups are furnished as standard equipment, while other style grease fittings and a Viking valve on pump head to prevent damage if discharge line is closed can be provided as optional accessories.

Master Kraft VCF-75 Is Floor Or Suspended Unit

MODEL VCF-75, Master Kraft warm air conditioner, developed by Harvey-Whipple, Inc., Springfield 1, Mass., is shipped as a vertical floor model, but may be easily transformed into a suspended unit. As a floor model, the unit measures 33" wide, 19" deep and 65" high, with a capacity of 75,000 Btu at the bonnet and 63,500 at the registers.

Two motors are standard equipment, one for the blower, the other for the gun type oilburner that fires the unit. The burner is built inside the unit, with its transformer built on burner head and extending outside the furnace. The VCF-75 unit, designated the Pillar as a vertical floor model, the Pendant when



converted to a ceiling-suspended unit, has a 4" flue outlet and is shipped complete, except for the fuel tank.

Circular Heat Calculator Available from Heat-O-Meter

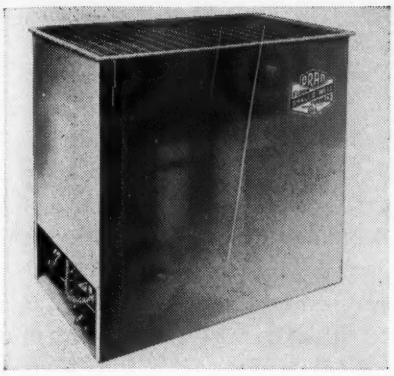
A CALCULATING DEVICE, consisting of three circular celluloid discs, developed by S. P. Taplow and available from Heat-O-Meter, New York 18, N. Y., provides heating information without any mathematical figuring. The calculator contains a blank space for writing with pen or pencil, which can be wiped off easily, or for imprinting of company names and products. Measuring 6½" in diameter, Heat-O-Meter can be slipped into a coat pocket and includes an 18" circular rule for measurement of curved lines on blueprints.

By setting given or known factors on the proper discs, a total of sixteen calculations are possible. Included are the sizes and capacities of radiators, boilers, hot water generators and storage tanks, mains, returns, risers, square and round chimney sizes, with minimum and maximum heights required.

Oran Shallo-Well Line Of Oilfired Floor Furnaces

THREE MODELS comprise the line of Shallo-Well oilfired floor furnaces, developed by Oran Co., Columbus 7, Ohio. Model 0-70 Super has an overall height of 34", and is rated at 70,000 Btu. The furnace embodies Armco aluminized steel in the combustion assembly and stainless steel in the burner for longer life and better heat diffusion. Other models are the 0-60 Special, rated at 60,000 Btu and the 0-50 Standard, rated at 50,000 Btu. The latter model is designed for natural draft with manual controls, though automatic controls and forced draft are available as optional equipment.

All models feature an auxiliary cold air return which draws cold air from bedrooms and other hard-to-heat areas. To service the unit it is not necessary to



remove the furnace from the floor. Baked enamel finishes of each model enhance eye and sales appeal.

Mack Announces Three New Diesel Truck Engines

END 457, 510 and 672 are the model designations of three new diesel engines announced by Mack Trucks, Inc., New York 1, N. Y. Operating on the four-stroke cycle and designed to provide controlled combustion and maintain low peak pressures, the engines are described as smokeless, odorless and free from strain.

Designed specifically for tractor-trailer combinations, 40,000 G.C.W. and up, the units feature Mack's Synchro-vance, which provides variable and automatic injection timing, synchronized to the speed of the engine.

Morse Chain Adds Couplings to Line

MIGHTY MIDGET all-rubber center couplings, designed for improved power transmission in fractional hp motors, have been added to the line of Morflex couplings made by Morse Chain Co., a subsidiary of Borg-Warner Corp., Chicago 4, Ill. Flexing caused by misalignment is absorbed by the entire center member and the tight fit of the coupling pins is described as lessening noise and vibration, resulting in smoother operation.

Bristol Offers Series 500 Absolute Pressure Gauges

DEVELOPMENT of a mechanical-type recording absolute pressure gauge, involving a pressure-sealed lever arm, has been announced by the Bristol Co., Waterbury 91, Conn. Designated series 500, the instrument is offered in ranges from 0 to 20 millimeters mercury and furnishes an accurate record of vacuum in terms of absolute pressure, inherently correct for barometric variations.

Quijada Pipe Threader Handles Up to 4" Pipe

THRED-O-MATIC pipe threading machine, announced by Quijada Tool Co., Los Angeles, has a range from ½" to 4" and features automatic chucking. Mechanically-operated chucks account for the machine's high speed, which merely requires the operator to lay the pipe to be threaded in the spindle and flip a switch. The pipe is automatically chucked, centered and turned. The only service or maintenance required, according to the manufacturer, is occasional sharpening of the 8 cutting jaws. Chuck jaws are hobbed similar to pipe wrench jaws so that the gripping power becomes firmer when more torque is applied to the pipe.

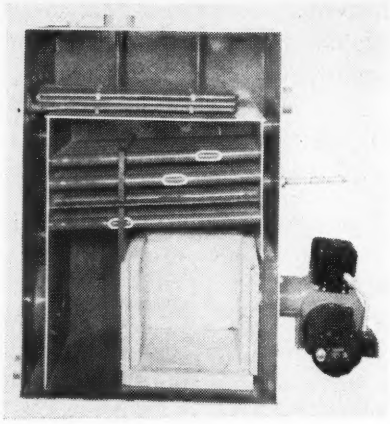
V & E Adds Two Sizes To Water Tube Boilers

ADDITION of two smaller sizes to its line of horizontal steel water tube boilers has been announced by V & E Products,

FACTS
EVERY OIL BURNER MAN SHOULD KNOW
about S.O.S. Combustion Chambers
INSTALLED in MINUTES!
KILN FIRED LASTS FOR YEARS
NO CEMENT
CEMENT
REQUIRED
MAKES ANY SHAPE
ROUND, SQUARE, PEAR, ETC.
FITS ANY BOILER!
2600° HEATS UP IN SECONDS!
INSULATING OR HARDBRICK
S.O.S. COMBUSTION CHAMBERS ARE STILL STANDING UP AFTER 17 YEARS ON THE FIRING LINE.
SCAT! SHOO!
OIL
BIG SAVINGS IN FUEL
So Simple! EVEN A BABY CAN PUT IT TOGETHER.
S.O.S. COMBUSTION CHAMBERS CARRY A MONEY BACK GUARANTEE AGAINST FAILURE AT THE RATED GALLONAGE PER HOUR.
Bob Goldberg
AVAILABLE AT YOUR WHOLESALER
If he cannot supply you write
282 - 284 Nassau Avenue
S.O.S. PRODUCTS COMPANY, Inc. Brooklyn 22, New York
Serving the Plumbing, Heating and Oil Burner Industries with 24 Leading Chemical and Refractory Products. Write for complete catalog

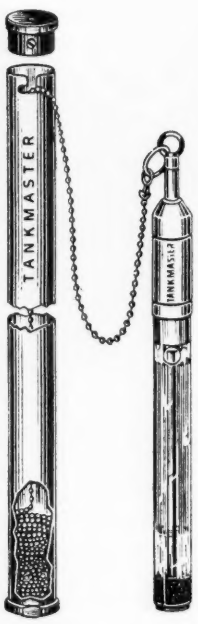
Inc., Schuylkill Haven, Pa. The complete line now has ten models, with capacities from 200 to 1,450 sq. ft. steam, 320 to 2,320 sq. ft. of hot water, SBI installed radiation. Oilfiring rates range from 1 gph for the two smaller sizes to 4.5 gph for the largest. All boilers are shipped complete with jacket, 3 gpm water heating coil and combustion chamber designed to burn catalytic oil.

Heat transfer is accomplished by the down-draft principle, with baffles directing all gases upward, over and down to the bottom of the boiler. All wearing surfaces of the unit have a ¼" minimum wall thickness of copper bearing steel plate, ASME construction. Available as an extra is a built-in tube cleaner.



R & M Tankmaster Samples Contents of Storage Tanks

TANKMASTER, a device for sampling the contents of storage tanks, is available from Renick & Mahoney, Inc., New York 6, N. Y. It is designed to show exactly the condition of oil at the bottom of a tank by taking a sample in a transparent container wherein sludge or water if present will separate from the oil.

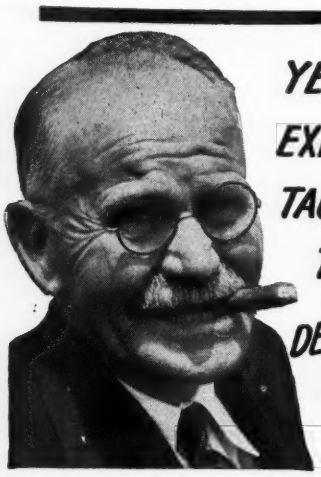


The Tankmaster is made of bronze, with a 6" visual section. It is provided with a metal carrying case and 15' of bead chain to permit lowering to the bottom of the larger sized storage tanks.

Four Basic Parts Comprise Kritzer Radiant Baseboards

FOUR BASIC PARTS, the steel back-plate, radiant coils, filler plates and interchangeable end posts, comprise the radiant baseboards announced by Kritzer Radiant, Inc., Chicago 25, Ill. Heart of the system is the Kritzer radiant coils, ten ft. sections of 2" x 5½" aluminum fins mechanically bonded to two, 3" center, copper supply tubes. As two sections are brought together, the supply ends in one section are belled, the ends of the other section inserted into the bell, a solder ring heated and melted between the two to complete the connection.

Complete installation is accomplished by securing the back plate to the wall, snapping the coils in place, soldering the sections, installing filler plates to cover up the soldered joints and placing the end posts where required. Ornamental grilles are available to be snapped on between the back plate and filler posts. Overall size of the baseboard with ornamental back plate is 2¼" x 9". All units come in standard 10' lengths, packed in



YEARS OF EXPERIENCE TAUGHT ME TO USE DEPENDABLE GAUGES. THAT'S WHY I RECOMMEND ONLY

LEVELOMETER Tank Gauges

These trustworthy gauges eliminate guess work and offer convenient remote readings... as well as assuring greater protection against overflowing oil tanks. Consequently, Levelometer tank gauges save service calls and offer greater customer satisfaction all around. Little wonder, Levelometer is the choice of dealers who insist upon dependable oil tank gauges.

Midget LEVELOMETER
Lowest priced Remote Reading Gauge built

"Liquids Worth Storing Are Worth Measuring"

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

CUT FUEL COST NOW

PATENTED

WITH THE NEW TRU-HEET OIL BURNER

Equipped with

SHELL DEVELOPMENT CO. COMBUSTION HEAD

Also

Many Other New Features

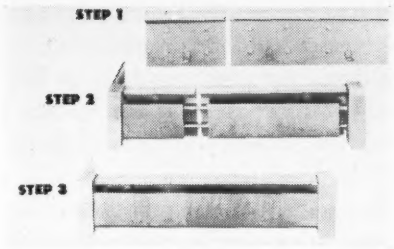
- CO_2 high as 15%—no smoke
- Fuel savings high as 30% and over
- Oil rate 0.50 to 10.00 G.P.H.
- Thousands of proven installations, since 1945

Also Boiler & Warm Air Units

Direct your inquiries to

TRU-HEET COMPANY
542 MILLER AVE.
TRENTON 10, N. J.

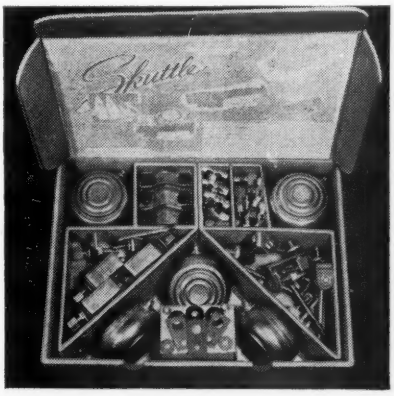
Manufacturers of Fine Oil Burners Since 1928.



a carton which includes five back plates and five radiant coils. Filler covers are packaged fifty to a carton, "inside-outside" corners and end posts ten each.

Service and Parts Kit For Skuttle Humidifiers

AN ASSORTMENT of parts for servicing Skuttle humidifiers is contained in the kit recently announced by Skuttle Mfg. Co., Detroit 7, Mich. The kit is a com-



pact, corrugated board box packed with 5 copper floats, 4 each of No. 1049 and 1120 valves, 5 No. 1075 saddles, 6 No. 1125 shutoff valves, 4 No. 1151 tube connectors and a package of assorted gaskets, washers and lock nuts. The kit may be used as a counter display.

It is designed to care for Skuttle series 300, 500 and 600 humidifiers. The series 600, incidentally, now is finished in attractive, durable grey hammerloid baked enamel. The 600 will handle any size furnace up to 180,000 Btu by varying the number of Vapoglas plates.

Viking Instruments Develops Oilburner Spark Check Control

DESIGNED to permit no flow of oil to an oilburner until an adequate spark has been obtained at the electrodes and also to lock-out if ignition does not occur within 10 seconds, Spark Check control, announced by Viking Instruments, Inc., East Haddam, Conn., utilizes an electronic spark detector.

The control consists of a 24-volt transformer, a bi-metal start timer which ionizes the spark gap for about 20 seconds before starting the burner, a standard thyraton tube, whose grid is connected to the spark gap by means of a probe electrode, a motor relay with lock-out feature, operating by the tube, and a 5 second bi-metal differential stack switch. In operation, the spark across the ignition electrodes actuates the vacuum tube, which starts the motor for a trial time of 10 seconds. At the end of that time, the oil flow will cease and the control will lock out, unless the stack switch, actuated by combustion heat, moves in and makes contact to keep the motor in operation.

Hess Furnace Units Fired With Gun Or Pot Type Burners

OILFIRED WARM AIR UNITS, announced recently by the Hess Co., Chicago 50, Ill., include Climate Master model 80-V and 80-P, 80,000 Btu bonnet delivery, 800 cfm, suitable for basement or utility room installation. Model 80-V is equipped with a mechanical draft va-

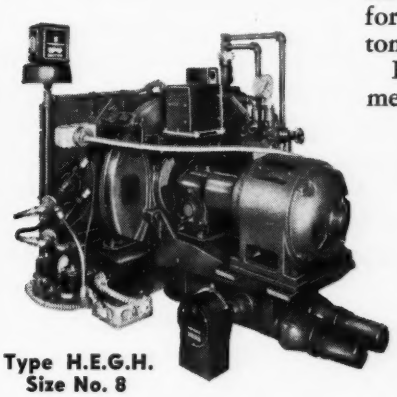
MAKE ANY TYPE OIL BURNER INSTALLATION IN YOUR TERRITORY WITH

SIMPLEX

Why be forced to turn down an installation job because you stock only one type of oil burning system?

With the SIMPLEX line of turbine and rotary type oil burning systems, you can make any industrial, commercial, domestic, or special installation in your community whether for manual, semi-automatic, or fully automatic operation.

Here are two superbly engineered members of the pioneer SIMPLEX line.



Type H.E.G.H. Size No. 8

SIMPLEX HORIZONTAL ROTARY TYPE BURNER

Available in 4 sizes for various types of commercial installations.

Features a recognized standard electric motor, fully automatic gas-electric ignition, complete electrical and mechanical controls, and positive oil-air adjustment. Built for clean, easy maintenance.

SIMPLEX PNEUMATIC TURBINE TYPE BURNER

For use in all types of industrial and special installations where equipment must really "stand-up."

Moving parts reduced to a minimum, ball bearing equipped. Burns *ANY* grade of fuel oil. Synchronized control of oil and air. Fully automatic.

A few choice territories now open. Write on business letterhead for illustrated circulars.

SINCE SIMPLEX OIL HEATING CORPORATION — SIMPLEX — OIL BURNING SYSTEMS — REG. TRADE MARK **1910**

SIMPLEX OIL HEATING CORP.

11 PARK PLACE • NEW YORK 7, N. Y.

Domestic, Industrial, and Custom Designed Oil Burning Systems

Thanks FROM... CARLIN

THE generous response to our announcement in last month's issue strengthens our conviction that Carlin has the right product teamed up with the right proposition. This adds up to profitable business for manufacturer and dealers who are willing to turn their backs to tradition and face present-day marketing facts.

Carlin oil burners are backed by long years of manufacturing know-how. And the U. S. Oil Burner line is well known to you for its quality. Together they offer dealers dependable products . . . in demand by customers . . . priced right for you and them.

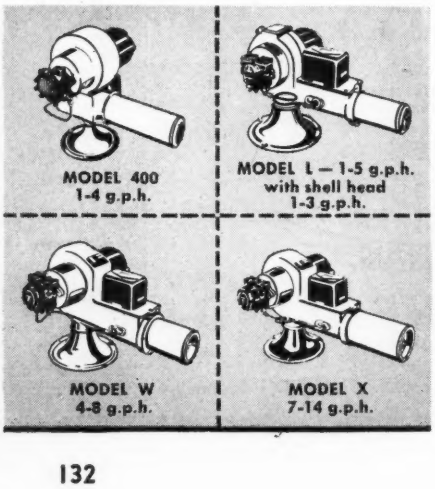
Find out about the Carlin proposition today. Write or wire for details of "New Opportunities with Carlin." The Carlin Company, Box 32, Wethersfield, Connecticut.

Team up with . . .

Carlin OIL BURNERS

US OIL BURNERS

FOR NEW OPPORTUNITIES



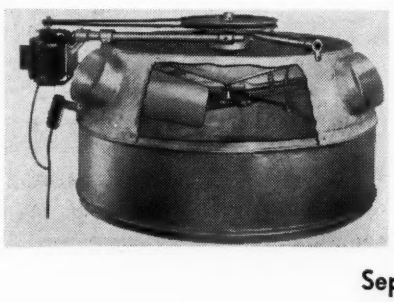
porizing burner; model 80-P employs a high pressure atomizing burner. Both units, except for burner and controls on model 80-P, are factory assembled and measure 25¼" square, 65" overall height. Return air connection may be made to 20" x 25" x 2" air filter on left side or bottom of the unit.

Climate Master Series O, fired with a high pressure atomizing, flange-mounted burner, consists of model 1100-0 with 110,000 Btu capacity at 1200 cfm; model 1400-0, capacity 140,000 Btu at 1200-1600 cfm. The former is factory assembled, except for burner and controls, model 1400-0 is shipped complete. Both units are 52" high, model 1100-0 being 26" wide and 52" long; 1400-0, 30" wide, 58" long. All heat transfer surfaces are under positive blower pressure and more than two-thirds of the heating surface is direct radiant surface. Units are furnished with a bottom plate, eliminating cement grouting at floor line.

Circulataire Booster Fan Installs in Furnace Bonnet

BOOSTER FANS, designed for installation in the bonnets of gravity warm air furnaces, have been developed by the Circulataire Div., Corlett-Turner Co., Chicago 24, Ill. Warm air rising in the furnace bonnet upon reaching a predetermined temperature, actuates a control which starts the fan installed inside the bonnet and forces warm air through the ducts. By adjusting dampers in the ducts or room registers the amount of heat being introduced into each room may be regulated.

Installation of the unit requires no change in existing heating pipes or cold air returns, nor is new sheet metal required. A patented suspension system, consisting of adjustable arms, secures the fan rigidly in place and permits quiet, vibrationless operation. Belt drive mechanism is employed.



Starr Company Develops Safety Range Oilburner Valve

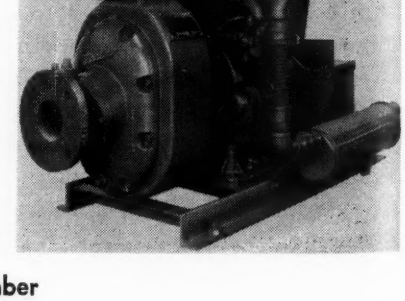
TO REPLACE conventional shut-off valves for range oilburner installations, Starr Mfg. Co., Manchester-by-the-Sea, Mass., has developed a unit equipped with two heads. Because it is impossible to change the setting accidentally, even if the head should be turned inadvertently in either direction, the valve is offered for its safety potentialities as well as its control features.

At present the safety head is being designed to fit all Worcester Taper Pin Co. valves, but it may be adapted readily to other makes also.

Marlow Tank Truck Pumps With Capacities Up To 20 Gpm

A NEW SERIES of self-priming centrifugal tank truck pumps recently announced by Marlow Pumps, Ridgewood, N. J., is made in 2" and 3" sizes, high or low head, with capacities from 20 to 220 gpm, flanged or threaded connections. Furnished complete with engine, the unit is equipped with a large spark arresting muffler and features push button electric starting.

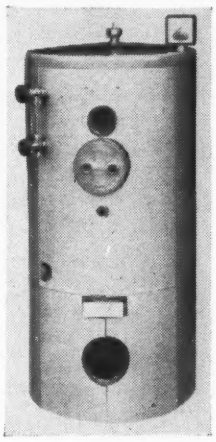
The pump primes itself and pumps by



the Marlow "diffuser" method, incorporating a patented shaft seal where the pump shaft enters the pump housing. The pump is said to be easily installed on any truck or trailer tank and can be transferred readily from one truck to another. In addition, it is offered as a reliable standby unit in the event of power failure at bulk plants and similar installations.

Norse Announces Midget Boiler, Redesigns Others

A MIDGET BOILER, announced by Norse Boiler Co., Inc., New York 7, N. Y., has a capacity of 320 sq. ft. of steam and 510 sq. ft. hot water radiation. Constructed of ¼" boiler plate, with 5/16" top and bottom crown sheets, the boiler has 2" 10-gauge tubes, with each tube baffled. It is supplied in flush jacket only and measures 42" high, 22" diameter, including the jacket, which snaps on without the use of screws or bolts. The lower half of the boiler is split to enable removal of the front plate and secure access to the combustion chamber. All connections are in front of the boiler.



Norse 400 and 500 boilers now are being furnished with an extended jacket, which has been made 8" longer than former jackets to accommodate gun burners with longer blast tubes. Design of the boilers has been changed to supply a large peep hole to permit the use of a mirror when adjusting the flame. Of similar construction to the Midget, the 400 and 500 boilers employ 3" 10-gauge tubes.

Wayne Announces Fireball Series A Burner

SERIES A gun type oilburner has been introduced by Wayne Home Equipment Co., Fort Wayne 4, Ind., after eighteen months of field testing. Capacity range for the burner is from ¾ to 1½ gph. Available in flange and pedestal mountings, the burner is equipped with Sundstrand fuel pump, Sola transformer, Marathon motor and Wayne controls. Housing, tube and pedestal all are cast construction, with the gun assembly accessible from the rear of the burner.

Other improved Wayne burners are series B, flange or pedestal-mounted, with 1½ to 2½ gph capacities; series KE, 2½ to 5 gph and series K6, 5 to 12 gph capacities.

Effective with the introduction of the new series, B. G. Duer, vice president in charge of sales, announced price reductions of approximately 15% on Wayne winter conditioners, boilers, water heaters, gas burner and several models of oilburners.

Add "Twin" Floor Furnace To Superflame Oil Line

ADDITION of a "twin" floor furnace to the Superflame line of oilburning heaters has been announced by Queen Stove Works, Inc., Albert Lea, Minn. It has a rated heat output of 59,000 Btu/hr, represented as being capable of heating up to eight rooms. The furnace is thermostatically controlled and protected by

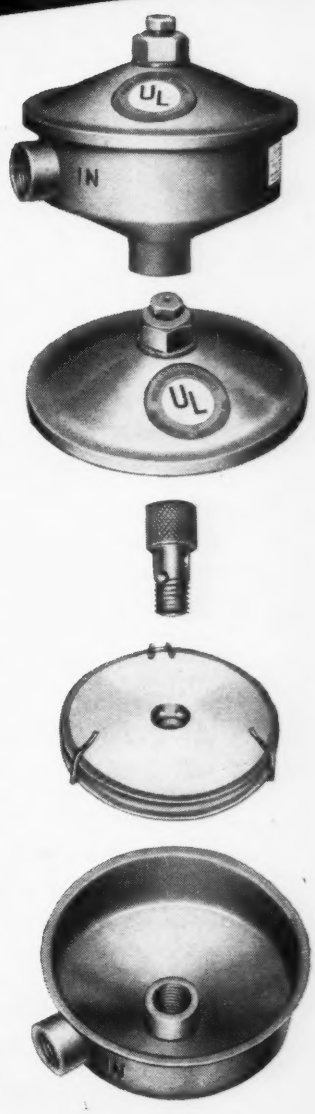
A sensation in the oil burner field

SPARKLER FUEL OIL FILTER...

surface type Model OB

DISTINCTIVE FEATURES

1. **A quality filter that will continue to operate under adverse conditions. No sudden stoppage of burner that necessitates night service calls.**
2. **Lint free filtering element is rayon filter paper that positively eliminates the possibility of lint clogging nozzle screens.**
3. **Large filtering area in a minimum space. More filtering surface is provided in a smaller space than possible with deep type filter. One set of filter elements will last an entire season in the average home installation.**

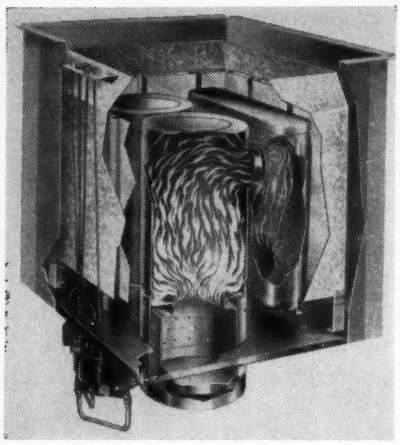


Surface type filtration as used in the Sparkler Model OB fuel oil filter has been used for many years in industrial filters for the removal of fine microscopic particles of residue. Sparkler surface type filters are used in processing petroleum products such as lubricating oils, heavy diesel oil and other oil stocks.

Now for the first time a fine grained surface type filter is available to the fuel oil trade. A filter that will remove all dirt and deposits found in storage tanks and at the same time eliminate the danger of sluffed off fibre particles clogging screens and causing sudden stoppage of burner.

Write today for special information about service dealer franchise

SPARKLER MANUFACTURING CO. 200 Lake Street, Mundelein, Ill.

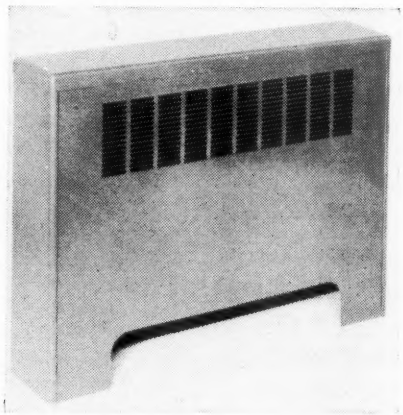


two Thermo-Safety bulbs, which automatically stop the fuel supply to the two three-stage burners if the furnace becomes overheated. Each burner has its own combustion chamber so that one burner may be used in mild weather and two burners during cold periods.

Available with either dual wall registers or a floor register, the burners of the unit are said to operate cleanly on high, medium or low fire and require only .04 in. of draft. Another feature is the "Fuel-Saver," which extracts maximum heat from flue gases and provides a total heating surface area of 2,834 square inches.

Universal Convectors Offered In Eight Cabinet Heights

COPPER CONVECTORS for steam and hot water systems have been introduced by Universal Convector Corp., New York 59, N. Y. Eight cabinet heights, from 18" to 36" are furnished as standard in



widths of 4", 6", 8" and 10", in eleven lengths ranging from 16" to 64".

The one pipe steam element is designed particularly for quiet service, with 1¼" pipe tap furnished as standard connection. Connections furnished on other types are ¾" pipe taps, with other sizes of tappings and connections available on special order. Heating elements employed consist of seamless copper tubing mechanically bonded to aluminum fins. Each element is tested at 100 lbs. air pressure before shipment. Dampers can be sent as optional equipment.

Marlow Augments Centrifugal Self-Priming Line of Pumps

EXPANSION of its line of self-priming centrifugal pumps has been announced by Marlow Pumps, Ridgewood, N. J. The amplified line contains twenty-six basic series, which are available in many modifications and combinations of mountings, fittings and materials. Design changes include a new cover plate engineered for increased strength and appearance, flanged suction and discharge connections and improved suction check valve.

Motor powered, long-coupled models comprise Type EL, with capacities and head ranges of 1½ to 10 inches, 15 to

Standard Equipment on Many Better-Known Oil Burners

AE Oil Burner MOTOR

Acclaimed by oil burner manufacturers the world over. The A-E Oil Burner Motor is 1/8 HP, 1725 RPM, 200% Starting Torque . . . Equivalent to many 1/6 HP motors.

None can compare with its economical operating performance. It enjoys incontestable superiority in the field. A-E features: manual-reset overload protection; attractive design; high quality, precision-machined parts; hand-wound stators, impregnated with high dielectric insulating varnish; extremely large wool-packed oil reservoir; completely enclosed housing; strong, lightweight aluminum alloy end bells; reinforced mounting lugs; statically and dynamically balanced rotor

ANCO *Ignition Transformer* Plug-in Type high voltage bushings for ease of assembly; best available insulation guards against breakdowns due to voltage surges, cutting troublesome servicing to bare minimum; housed in drawn steel, streamlined cases; high grade baked enamel finish; radio interference sheilding; provision for internal wiring compartment. Standard ratings: 115 & 220 volts, 50 & 60 cycles; 10,000 secondary volts; secondary short circuit current 23 MA; write ANCO for YOUR needs!

AE Manufactured For Leading Oil Burner Manufacturers By

ANCO PRODUCTS CORPORATION

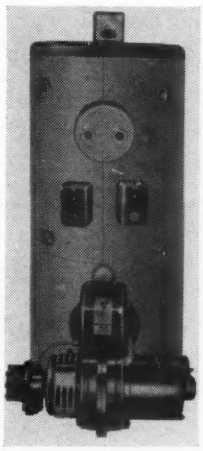
P. O. BOX 1307 • PATERSON, N. J.

3500 gpm and 15 to 170 ft., respectively. Type EC, close-coupled models deliver from 50 to 250 gpm and three vertical models make up Tpye EV. Electrically driven, with motor close-couple-mounted over the pump, capacities of the units range from 5 to 70 gpm, 15 to 47 ft. heads. Type EB includes self-priming centrifugals in pump end only or fitted for V-belt drive. In high and low pressure models, sizes range from 1½ to 10 ins., capacities from 15 to 3500 gpm, heads from 15 to 250 ft.

All pumps feature Marlow's free-flow design and diffuser method which enables the pump to prime automatically. The pumps contain no by-pass valves or other mechanical devices.

Delta Boiler-Burner Unit With Built-In Tankless Coil

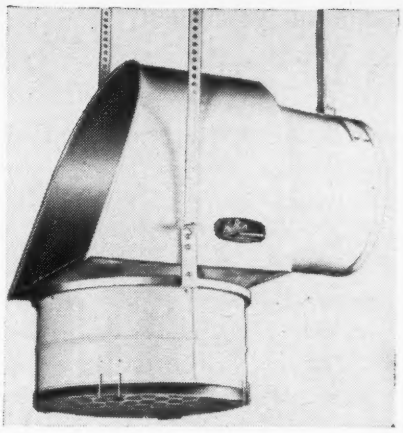
MODEL LA-200 boiler-burner unit, available from Delta Htg. Corp., Jackson Heights, N. Y., is fired with a flange-mounted, ¾ gph gun type burner and has a 66,000 Btu/hr output. Jacketed the unit is 38" high, 18" in diameter, is of ASME steel construction, with a ¼" shell, 10 gauge boiler tubes and 16 sq. ft. of heating surface.



It is designed for hot water heating systems and is equipped with a built-in tankless coil, supplying 180 gph of domestic hot water. The tankless coil, boiler and burner can be attached and piped and the sectional jacket assembled later. All connections are to the front of the boiler, permitting installations close to the wall.

Walton Adds Model 30 To Its Humidifier Line

MODEL 30, an addition to its line of industrial humidifiers by Walton Laboratories, Inc., Irvington, N. J., evaporates water at the rate of 3 gph. Electrical consumption is approximately 230 watts and, in common with other Walton models, installation requires only connection to a water supply and electric current.

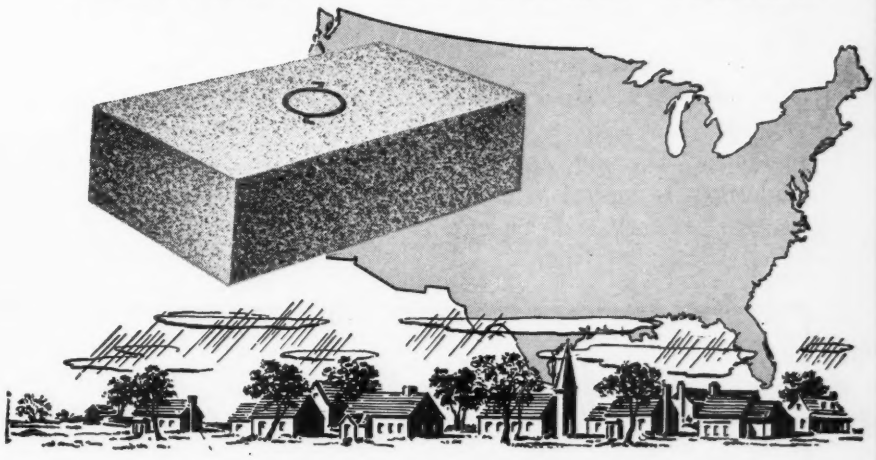


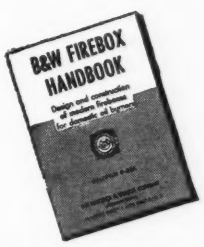
The units require no compressors, air or drain piping and may be used in multiple, are suitable for spot humidification or for boosting the humidity obtainable from existing systems.

Gilbarco's GWA-100 Furnace Rated at 100,000 Btu Capacity

MODEL GWA-100 furnace-burner unit, has been added to its Gilbarco line by Gilbert & Barker Mfg. Co., West Springfield, Mass. It is fired with a burner, including all the service features of Gilbarco's new GCN, and incorporates

Let "A Quarter of a Million Families" Be Your Guide





Send Today
for the
B&W FIREBOX HANDBOOK
a sure guide to customer satisfaction and more sales.

Yes, more than a quarter million families are getting oil heating comfort at a much lower cost because wide-awake and alert dealers have provided them with B&W Fireboxes.

This figure carries a vital sales message for you. It shows that dealers and customers all over the country recognize the advantages of B&W Insulating Firebrick. It proves that they are "sold" on the Fireboxes that —

1. **Save fuel, due to more efficient insulation.**
2. **Minimize odor, soot and smoke.**
3. **Assure smoother, quieter burning.**
4. **Respond quickly to thermostat by reaching temperature quickly from a cold start.**

Follow this lead to increased sales and profits—by showing your customers the benefits of B&W Fireboxes.

R-298

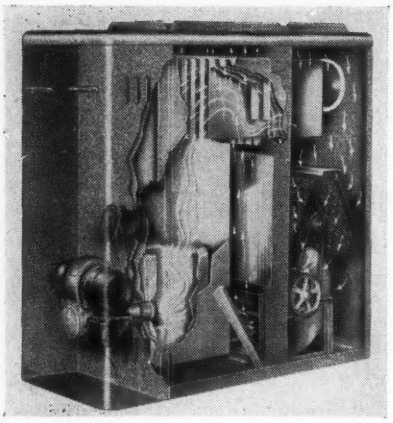
B&W REFRACTORIES PRODUCTS

B&W 80 FIREBRICK • B&W JUNIOR FIREBRICK
B&W 80 GLASS TANK BLOCKS • B&W INSULATING FIREBRICK
B&W REFRACTORY CASTABLES, PLASTICS AND MORTARS

OTHER B&W PRODUCTS

Stationary & Marine Boilers and Component Equipment
Chemical Recovery Units . . . Seamless & Welded Tubes . . . Pulverizers
Fuel Burning Equipment . . . Pressure Vessels . . . Alloy Castings

BABCOCK & WILCOX
THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES: 85 LIBERTY ST., NEW YORK 6, N.Y.
WORKS: AUGUSTA, GA.



a heat exchanger of the counter-flow type used in the company's suspended and vertical warm air units. Developing a capacity of 100,000 Btu/hr, the unit is not packaged, but it is shipped with its stainless steel combustion chamber in place, ready for firing.

A channel iron foundation facilitates positive positioning of components and interlocking housing panels. The burner is enclosed in a vestibule, which lifts off to allow accessibility for servicing and adjustment. The unit, now in volume production, is finished in green Hammer-tone enamel and measures 25" wide, 55" high, 59" long.

Redmond New Small Motor Is Two-Pole Offset A.C. Type

A SMALL SKELETON two-pole A.C. motor, type AG, has been added to the line of Micromotors and blowers made by Redmond Co., Inc., Owosso, Mich. Built in sizes ranging from 1/100 to 1/500 hp, the motor weighs 21 oz., measures 2⅜" wide x 2⅞" deep, approximately 2" overall length including shaft. Features include air gap concentricity, sturdy bearing brackets, oil reservoirs, high quality enameled windings.

Add Two Flame Failure Safeguards to Fireye Line

TWO ADDITIONS to the Fireye line of flame failure safeguards have been announced by Combustion Control Corp., Cambridge 42, Mass. The first, an oilburner combustion safeguard, designated FF-1, consists of a photoelectric scanner and programming control. The photoelectric system continuously monitors the flame and if it fails signals the programming control. The programming control automatically starts the burner and programs a sequence of valve openings, post ignition time, priming and scavenging.

The second system, type 18T-2, consists of a phototube and amplifying system, housed in a dust-tight aluminum case. It provides operating flame failure for manually ignited oilburners and is used with programming controls to protect automatic systems. Heat-resisting filters and heat insulating fins protect the housing so that the entire control may be mounted directly on the boiler or furnace wall.

Supreme Oil Burner Readies Two Horizontal Vaporizers

TWO MODELS, one manually operated, the other automatic, have been developed by Supreme Oil Burner Mfg. Co., Stillwater, Minn. The burners feature a horizontal flame, operating on the hydroxylating principle, and are rated at ½ and 2/3 gph capacities. Btu/hr ratings for the manual model are 61,000 and 92,000, with the automatic model offered in the larger size only.

All are of the forced draft type and are delivered equipped with metering valve and oil level control to introduce

NEW OILHEATING BOOKS •

INSTALLING THE DOMESTIC OILBURNER

This is the first practical guide on oilburner installation. It contains the most significant articles from FUELOIL & OIL HEAT that cover all phases of installation step by step. It is 8½ by 11 inches and contains 64 pages. Illustrated with numerous diagrams, charts and photos.

$1.

LOW PRESSURE BURNERS

Only book other than manufacturers' manuals that gives a full picture of low pressure burner principles of operation and construction—Winkler, Oil-O-Matic, G. E., Hart, Hev-E-Oil. Skeletonized diagram of each make of burner makes them more understandable. The new booklet is 8½ by 11 inches, contains 20 pages.

$1.

OILHEATING SNAGS

This book gives the solutions to many of the Everyday Snags that annoy you in installation and service. We've been working on them for years. They are all simple and practical answers to the most common goat-getters on jobs. It's an 8½ by 11 inch book of 64 pages.

$1.

HEADING OFF TROUBLE IN DOMESTIC OILHEATING

This book contains articles about the most important precautions to take in installations and service and thereby cut down the number of service calls. The selection is about those things which give the greatest amount of future trouble for service men. A highly practical compilation of pieces from FUELOIL & OIL HEAT. It's a 64-page book 8½ by 11 inches.

$1.

Please send check, money order or cash to avoid bookkeeping on the hundreds of small orders we must handle in book sales.

HEATING PUBLISHERS, INC.
232 Madison Ave., New York, 16

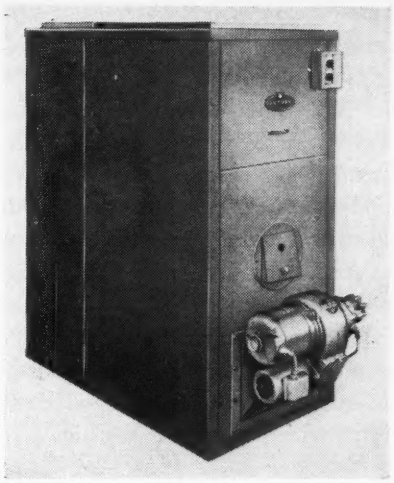
a constant supply of fueloil into the burner's cast-iron combustion chamber where it is mixed with combustion air and vaporized. For range installation, where the manual model is recommended, the burner can be installed without removing grates or water coils.

Develops High Speed Process For Making Motor Bearings

A PROCESS for high speed manufacture of powdered metal self-aligning bearings for fractional horsepower electric motors has been developed by International Powder Metallurgy, Inc., Ridgway, Pa. Involving the use of fully automatic equipment, the manufacturer is enabled to produce mass quantities with tolerances of .0003" on the inside diameter at lower unit costs. Bearings are made to specification.

Century Engineering Offers Convertible Furnace Units

SPECIEICALLY designed to permit dealers to compete for low-cost home heating business are the Convertible furnace units developed by Century Engineering Corp., Cedar Rapids, Ia. The units may be gas fired, used with a high pressure gun type oilburner or equipped with a power-vaporizing oilburner, which Century is offering for the first time. Featured are a newly-designed heat distributor, a primary all-welded steel heating chamber, a safety device to prevent down draft from extinguishing burner or pilot flame and stack connection at the rear of the furnace.



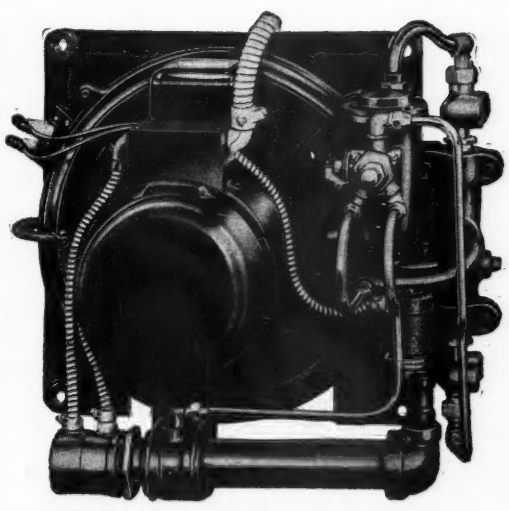
A Loboy basement model furnace is 53" high, fired with the Century gas burner and an input of rating of 100,000 Btu's. The convertible Hiboy for utility room or kitchen installation is 2' square, with an input rating of 60,000 Btu's. When equipped with a vaporizing burner the Hiboy has a bonnet rating of 60,000 Btu, and the Loboy, 80,000 Btu's. The Loboy with Century's gun type burner rates 80,000 Btu at the bonnet.

Sensitive Pressure Controls Offered By Coral Designs

CAT. 101 sensitive static pressure controls, offered by Coral Designs, Forest Hills, N. Y., are recommended for use in air conditioning and heating where it is desired to control a circuit from the suction or exhaust side of a fan, in connection with reversing type damper control motors, to control overfire draft, signal or safety devices to indicate high or low pressures and similar applications.

Units are small in size, obtainable in ratings ranging from 0" to 20" water pressure or vacuum with range adjustment and fixed differentials from .2" to

"TIME-TESTED and APPROVED" *on big heating jobs all over the world!*



Johnson's world famous 30-AVH Burner uses pre-heated heavy oils that keep fuel bills low. It is built in six sizes and capacities that meet virtually any heavy-duty heating need.

THE FAMOUS **JOHNSON 30-AVH**

Built to deliver dependable, low-cost heat in **HOTELS, HOSPITALS SCHOOLS or SKYSCRAPERS!**

Probably more big buildings have been heated for more years by Johnson's 30-AVH than any other single oil burner model ever built.

For all around efficiency and fuel economy the 30-AVH is unsurpassed. Heating Engineers, the world over, have learned from actual experience that they can depend on 30-AVH performance. We believe it deserves your careful consideration for any heavy-duty heating job.

If the 30-AVH doesn't fit your specifications, there are other fine Johnson Oil Burners that will. For the Johnson line-up is a *complete* line-up; small "packaged" domestic burners . . . water heaters of every size . . . air, steam and hot-water units . . . and a wide assortment of heavy-duty burners. Tell us what you need. We'll be glad to help you.

There's a Johnson Oil Burner for every heating need

Johnson Oil Burners

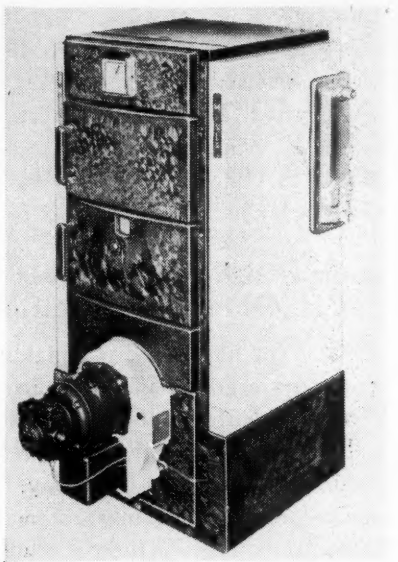
S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
401 No. Broad St., Philadelphia 8, Pa.

2″ of water. Controls are constructed of cast aluminum, featuring a Neoprene rubber diaphragm which directly actuates the switch through a disc. Available with double throw circuit or floating contacts, electrical ratings are 10 amp., 125 v. or 5 amp., 250 v., A.C.

Smith-Mills "100" Boiler For Residential Heating

FOUR SIZES of Smith-Mills "100" boilers are available from H. B. Smith Co., Inc., Westfield, Mass., designed for residential steam or hot water heating systems. I-B-R net ratings for steam models range from 350 to 575 sq. ft., 550 to 920 for hot water heating applications. Models can be furnished with flush or extended jacket and built-in tank or tankless heater. All are ASME hydrostatically tested. Fired with gun type oil-burners, firing rates range from 1.3 to 2.05 gph.

A particular feature of the units is an improved brick combustion chamber, backed with insulating material furnished with the unit. It is claimed that



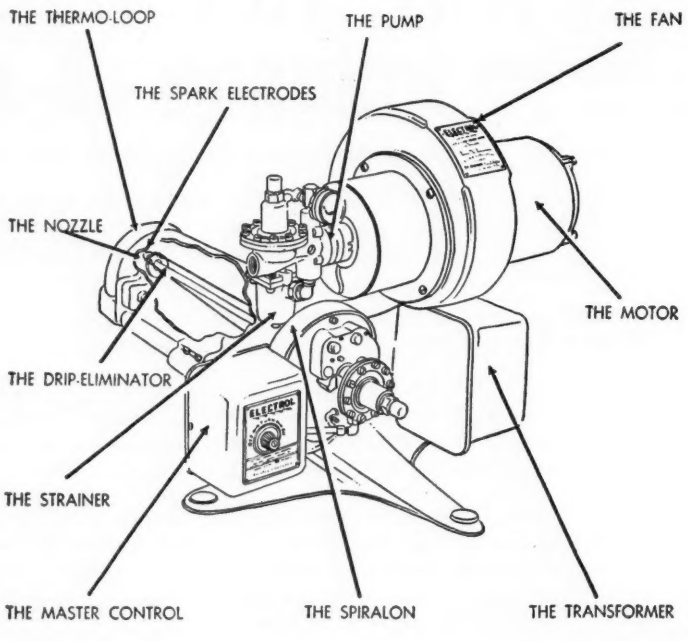
while temperatures in the heart of the unit may reach 2000° F., the outside foundation walls remain cool to the touch. The bottom fire brick plate acts at a template to assure accurate assembly of the chamber.

BARGAIN BASEMENT or MAIN FLOOR?

Don't lose your profit in bargain basement sales. An outstanding burner is easier to sell than an ordinary burner. It is not necessary to cut price with ELECTROL.

Tell your prospect of ELECTROL'S exclusive features—the Ball Flame, the Drip Eliminator, the Master Control. Point out 30 years of outstanding performance. Offer a lifetime burner for only a few extra cents a month.

Let us tell you how to sell a high class burner in a low price market.



"BETTER OIL BURNERS FOR 30 YEARS"

ELECTROL BURNER MANUFACTURING CO., INC.

22 Union Ave., Rutherford, N. J., Phone RU 2-8300

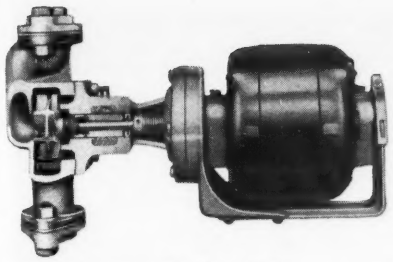
Weston Ammeter-Voltmeter Has Five Current Ranges

AN A-C CLAMP AMMETER and voltmeter, with five current ranges up to 1000 amperes, three voltage ranges up to 700 volts, has been announced by Weston Electrical Instrument Corp., Newark 5, N. J.

Model 633 Type VA-1 is designed to measure alternating currents and voltages without interrupting service by placing heavily insulated, trigger-operated clamping jaws around the conductor and connecting a set of clip-on voltage leads to the line and screw-type terminals in the side of the meter. Current or voltage measures are made by rotating a thumb-selector switch to either the ampere or volt position. A pointer stop shows motor-starting currents.

Taco Offers Three Sizes Of Horizontal Circulators

THE "HC" horizontal circulator, developed by Taco Heaters, Inc., Providence 3, R. I., is a low cost unit, featuring high quality and extra capacity. It is constructed to incorporate such features as porous bronze oilite bearing, spring drive coupling, stainless steel shaft, cast bronze impeller, 2 bolt flanges. Body of

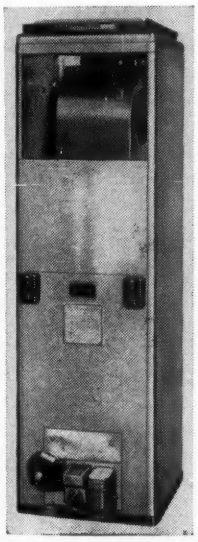


the unit is rotatable for different pumping positions, with all components accessible for servicing.

Sizes available are 1", 1¼" and 1½", with the smallest size available with ¾" flanges. Capacities range from 7.5 foot head for all sizes at zero gpm to 42 gpm at zero head for the 1" size, 43 gpm at zero head for the 1¼" and 44 gpm at zero head for the 1½" model.

Moncrief's Counterflow Unit for Gas or Oilfiring

COUNTERFLOW Utility air conditioning units added to the Moncrief line, made by Henry Furnace & Foundry Co., Elyria, Ohio, are for basementless and ranch type homes where the structure is built on concrete floor slabs. Designed for gas or oilfiring with a vaporizing burner, gas units are rated at 75,100 Btu, oil units at 76,000 Btu at the discharge outlet.



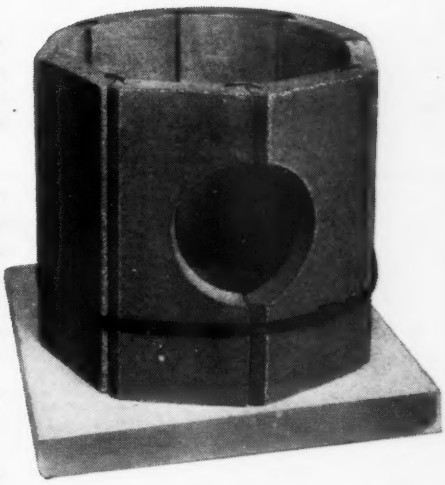
The complete unit is placed over a pit in the concrete floor and the heated air forced down through the open floor of the unit into the pit which feeds ducts or heat pipes imbedded in the concrete slab. Another application permits placement of the unit over a plenum chamber, with ducts run in the crawl space under the slab. Units are factory assembled and require only a small installation space.

Milos Model WK Oilburner Employs "No Hum" Mounting

MODEL WK, conversion gun type oilburner, developed by Milos System Devices, Clifton, N. J., has been approved by Underwriters' Laboratories under Commercial Standards CS-75, for firing rates up to 2.85 gph. Construction features heavy-duty casting, long hour motor, careful, individual assembling. Each burner is tested before shipping.

The burner housing is mounted on the base by a patented process, designed to eliminate hum and noise. The housing is connected to the base at the front by an adjustable suspension arrangement, with neither the sides nor back of the housing touching the base. Two parallel bars across the base, but independent of the housing, are situated to curb vibration and eliminate hum.

LOWER PRICES FOR R&I "2 in 1" Chamber



Because of new, streamlined packages you can now buy R & I Combustion Chambers at much lower prices.

Chambers are precast of medium-weight, high temperature refractories which have service limits far beyond temperatures encountered in modern oil burners.

Called the "2 in 1" Chamber because:

1. **Quick Heating is produced by thousands of tiny projections inside Chamber which attains glowing radiance the moment the burner switches "on."**
2. **Medium Heat Storage—R & I Combustion Chamber gradually gives up stored heat after the flame shuts "off," providing efficient, smoke-free fire box.**

Your supply house has R & I Combustion Chambers. Write us for new informative booklet OB-100 which gives valuable information for dealers and installers.

REFRACTORY & INSULATION CORP.

116 WALL ST., NEW YORK 5, N. Y.

Chicago 4, Ill., Newark 2, N. J., Philadelphia 2, Pa.

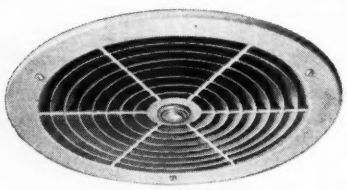
R&I COMBUSTION CHAMBER

Dart Pipe Unions Have Ends Of Steel Pipe Coupling Stock

A PATENTED steel union for low pressure, 150 lb., service has been developed by E. M. Dart Mfg. Co., Providence, R. I. Sturdiness, high corrosion resistance and ease of installation are claimed for the unions which have ends made from steel pipe coupling stock, polygonal shaped to permit use of open-end wrenches in close-quarter installations.

Hart & Cooley Ceiling Outlets in Five Sizes

FIVE SIZES of a new ceiling outlet have been introduced recently by Hart & Cooley Mfg. Co., Holland, Mich. Designed for use with standard package,



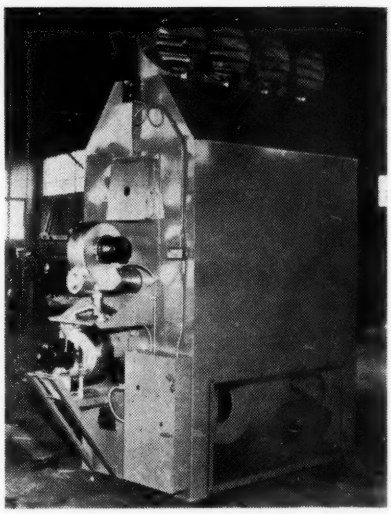
residential heating units the outlets are furnished complete with removable installation flange, sponge rubber gasket seal and baked on prime coat finish. All sizes have resistance ratings equal to or less than the resistance of comparable standard size registers recommended by the National Warm Air Heating and Air Conditioning Association.

Outlets are available in 6", 8", 10", 12" and 14" diameters. General data on the outlets indicates they can be used with round duct from 6" to 9" in diameter; rectangular ducts from 4" x 8" to 8" x 8".

Olson Direct Fired Heaters For All Types Of Firing

A LINE of direct fired warm air heaters, offered by Arthur A. Olson & Co., Canfield, Ohio, is available in a complete range of sizes for all types of firing equipment. Designed primarily for heating and ventilating work, capacities range from 500,000 to 2,000,000 Btu/hr for stokerfired units, 300,000 to 2,000,000 Btu/hr for gas and oilfired models. A series of central type units have capacities up to 6,000,000 Btu/hr.

Special features of the direct fired models are 4-pass gas travel, separate in-



duced draft fan allowing the burner to start before the blowing fans start circulating warmed air. Directional air outlet nozzles are adjustable. All bearings are located on the outside of the heater facilitating maintenance.

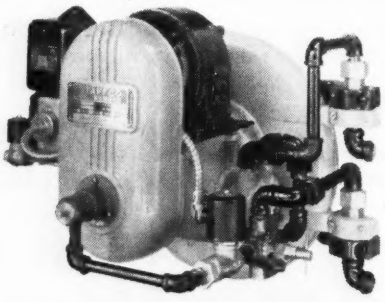
Bryan Boiler Unit With Burner, Water Circulator

A SMALL HOME, boiler-burner unit, announced by Bryan Steam Corp., Peru, Ind., can be fired with gas or oil and is

STAFFCO
INDUSTRIAL BURNERS
Are Easy to Install!

Increase your profits by selling heavy oil commercial and industrial burners! Fuel Oil Dealers! Heavy oil is the quickest way to build up your gallonage! Practical, factory engineering assures profitable installations and satisfied customers!

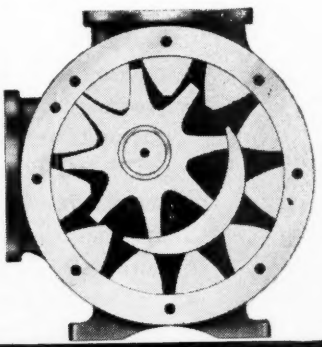
No. 5 and No. 6 oil



4 to 165 g.p.h.

STAFFCO ENGINEERING COMPANY
6600 South Austin Avenue Chicago 38, Illinois
Fred Ravnsbeck, *Chief Engineer*
WRITE FOR COMPLETE INFORMATION.

You can PUMP IT *with*



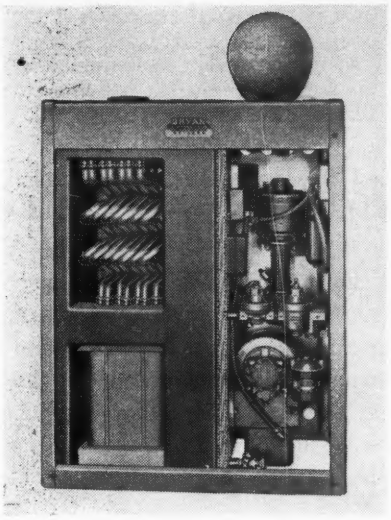
VIKING ROTARY PUMPS

The pump that moves any clean liquid regardless of viscosity . . . that is the Viking Rotary Pump.
Its "Gear within a Gear—2 moving parts" principle gives you this service. Its rugged construction, without small intricate parts, springs, gadgets, etc. assure long, dependable life.
Viking rotary pumps are engineered for the job . . . to do the work assigned them. Ask for free folder 1500EE today. Recommendations gladly given without obligation.

VIKING AN HONORED NAME IN PUMPING

See Our Catalog In SWEETS

Viking PUMP COMPANY Cedar Falls, Iowa

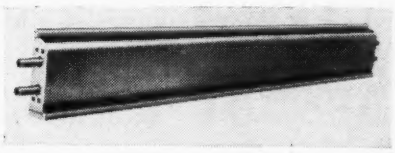


designed for radiant heating applications. The boiler is completely self-contained with burner, water-circulating pump and insulated fire box, and is equipped with Bryan replaceable copper tubes.

Side panels of the unit may be removed for inspection or adjustment. One model measures 31″ wide, 18″ deep, 41″ high and delivers 70,000 Btu/hr; a larger model is rated at 100,000 Btu/hr, both constructed according to ASME specifications. The unit when delivered need only be connected to water and electrical outlets, with no special constructions or settings needed.

Baseboard Radiation Unit Announced by Huron Boiler

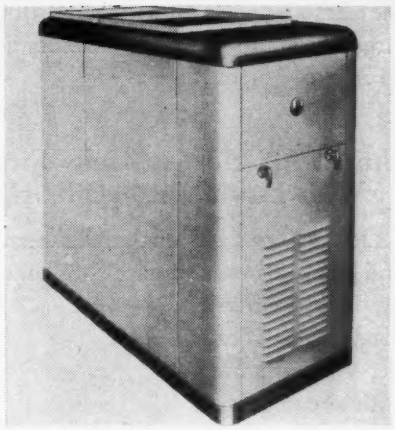
BASEBOARD radiation units, announced by Huron Boiler Co., Detroit 34, Mich., are installed along outside walls at floor



level, designed to radiate heat laterally and circulate it vertically. Room systems are made up of individual units constructed of a series of aluminum fins. Copper tubing, which runs through the fins, carries water at 180° F.

Gillen Adds Series of Furnace Units to Line

ADDITION to its line of a new series of warm air winter air conditioners has



been made by J. L. Gillen Co., Dowagiac, Mich. Designed for gas or oilfiring, the models have bonnet output ratings ranging from 60,000 to 100,000 and feature a furnace body and heat exchanger assembly located on the discharge side.

Cabinets have a separate base and top assembly, finished in bronze, with body panels finished in gold hammertone with rounded corners. Units measure 26″ wide by 54″ long by 52″ high, equipped with centrifugal type blowers with adjustable motor pulleys to permit continuous air circulation. A flange-mounted pressure atomizing burner fires

PROFIT NOW!

WITH

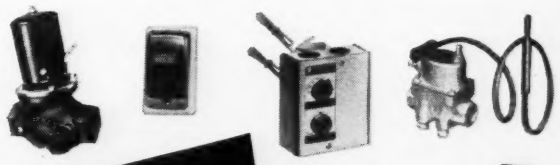
GRAND RAPIDS FURNACE CLEANERS

It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.

Act now! Write today for complete information and prices.

DOYLE VACUUM CLEANER CO.

233 Stevens St., S.W. Grand Rapids 7, Michigan



GENERAL CONTROLS . . .
THE ACKNOWLEDGED STANDARD IN AUTOMATIC PRESSURE, TEMPERATURE, LEVEL AND FLOW CONTROL UNITS

Here are a few of an outstanding line of Controls for Industrial, Commercial and Domestic applications.

★ALL-GAS CONTROLS
★AIRCRAFT CONTROLS, ELECTRIC
★AUTOMATIC SAFETY PILOTS
★GAS REGULATORS
★LOW WATER CONTROLS
★GOVERNOR TYPE VALVES
★HI-LOW-OFF VALVES
★INDUSTRIAL VALVES
★LOW PRESSURE GAS VALVES
★MOTOR OPERATED VALVES
★MAGNETIC GAS VALVES
★PILOT BURNERS
★PILOT GENERATORS
★REFRIGERATION VALVES
★SOLENOID VALVES
★STRAINERS—RELAYS
★GAS COCK SAFETY VALVES
★THERMOSTATIC CONTROLS
★TRANSFORMERS—SWITCHES
★THERMOPILOTS

Controls for air, water, steam, natural, manufactured and liquefied petroleum gases, light and heavy oils, etc., refrigerants such as: freon, methyl chloride, sulphur dioxide and ammonia.

A. C. or D.C., normally closed or open types. High and low pressures and temperatures. PROVED AND IMPROVED PERFORMANCE IS PROOF THAT YOU CAN'T BUY BETTER CONTROLS.

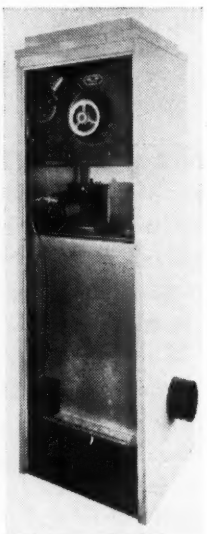
FOR COMPLETE SPECIFICATIONS REQUEST NEW CATALOG.

GENERAL G&C CONTROLS
801 ALLEN AVENUE GLENDALE 1 CALIF.
Manufacturers of Automatic Pressure, Temperature, Level & Flow Controls
FACTORY BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

the oil model, enclosed within a vestibule large enough to permit accessibility and servicing.

United Air Heaters Units Fired With Down-Flame Oilburner

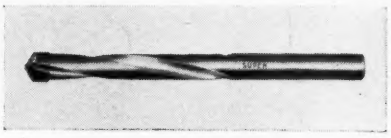
A LINE of floor and dual wall furnaces and hiboy domestic furnaces, announced by United Air Heaters, Inc., Seattle, Wash., is fired with a forced draft "Down-Flame" oilburner, covered by Breese patents. In the floor furnace the design of the burner permits it to be located at the top of the unit, immediately below the grille. The overall depth of the unit and required excavation is thereby reduced and the hazard of heat failure from water seepage is lessened. In addition, raising the grille affords accessibility to the burner and controls. The heat exchanger is of 12 gauge welded steel and dimensions of the required floor opening measure 26" x 30". Overall depth from floor level to the bottom of the unit is 36". Unit is shipped completely assembled and wired. An optional feature provides an added cold air duct connecting with a distant room. The heater is available in the Twinair-Wall model, designed for installation below a partition.



A hiboy Down-Flo unit also is fired with the Down-Flame burner, and occupies an overall floor area of 22½" x 23½". Controls are out of sight and shielded from the heat, accessible through the unit's front panel. Warm air is delivered at the bottom of the unit and for a combination of radiant and convected heat, the warm air can be piped through hollow tile below or imbedded in the floor to a number of distribution grilles.

Spiral Masonry Drill For Deep Hole Drilling

A CARBIDE TIPPED masonry drill with spiral flutes is being produced by Super



Tool Co., Detroit 13, Mich., for drilling in brick, concrete and stone, but specifically for deep hole work.

The spiral flutes carry chips or powdered material up out of the hole, making continuous drilling possible and reducing shank bending and drill breakage. The drill is an addition to Super's present line of Hex body drills, straight flute and extra length fluted types.

Cyclotherm Steam Generators Feature Unique Nozzle Design

AVAILABLE in sizes ranging from 10 to 300 hp, pressures from 15 to 200 lbs., steam generators announced by Cyclotherm Corp., New York 4, N. Y., emphasize improvements in operating features. They incorporate a new type of high atomizing burner nozzle, employing a primary air supply to assure precise fuel injection and air for combustion at all firing rates. In addition, the new

"Instrument check-ups open the doors to profitable equipment sales."

The FYRITE Combustion-Testing SERVICE KIT

..BASIC TEST TOOLS for Sales and Service

The FYRITE Service Kit provides a complete set of accurate, quality-built combustion-testing instruments at the lowest cost. It contains the FYRITE, the heating trade's favorite CO_2 Indicator; the popular DRAFTRITE Draft Gauge; and a 950° F. Stack Thermometer—all packed in a sturdy metal carrying case, with instructions and the Fire Efficiency Finder. This unique slide rule gives heating efficiency and dollars of fuel saved without calculations or reference to charts.

Instrument-testing will convince the most skeptical prospect that it will pay to follow your recommendations to replace or modernize his heating plant. For example, a Chicago dealer sold 68 burners and $50,000.00 worth of equipment and repairs by making heating efficiency tests. Another dealer, in a small Pennsylvania town, checked 43 heating installations and sold 10 complete replacements by using instruments to demonstrate the heating inefficiencies of existing equipment.

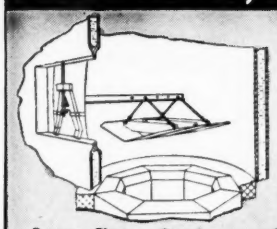
FYRITE Service Kit—$50.00 List F.O.B., Pgh. complete with the TEMPOINT All-Metal Thermometer illustrated; or $48.00 List F.O.B., Pgh. complete with mercury-in-glass thermometer.

Ask your Jobber or Write for Bulletin 730.

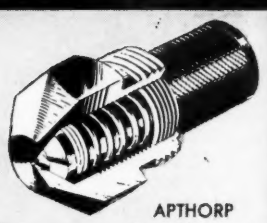
BACHARACH Industrial Instrument Co.

7000 BENNETT STREET • • PITTSBURGH 8, PA.

FOR Quality INSTALLATIONS



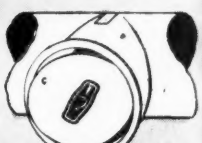
Boston Chrome Steel "HANG-DOWN" BAFFLE



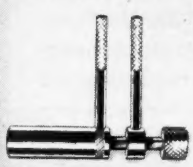
APTHORP True Alignment OIL BURNER NOZZLE

BOSMACO

Instant-Glo COMBUSTION CHAMBER



The Boston Standard DRAFT CONTROL



Ideal NOZZLE EXTRACTOR

Clearview OIL TANK GAUGE

BOSMACO Apthorp NOZZLE KIT

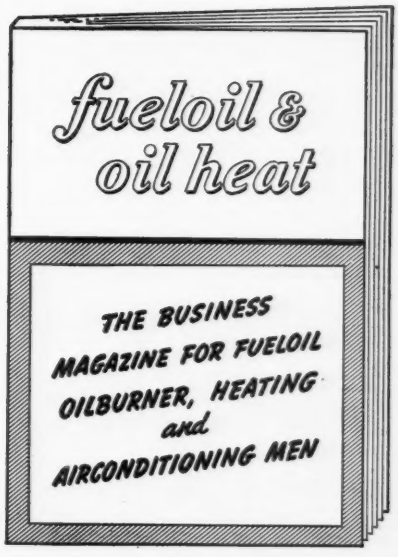
WRITE FOR COMPLETE INFORMATION

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

OCTOBER is one of the "BIG" months in oil heating. All issues of FUELOIL & OIL HEAT are good ones for advertisers, and OCTOBER is GOOD PLUS . . . .

Now in our 32nd year of Service to the industry. We offer 83.6% coverage of the field; low rates; many services to advertisers; excellent results. Member Controlled Circulation Audit—we prove our circulation claims.



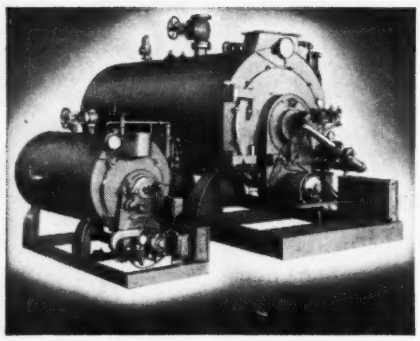
Advertising Forms for The October Issue Close SEPTEMBER 24

Better Send YOUR ad early!!

FUELOIL & OIL HEAT

Main Office: 232 Madison Ave., New York 16 (LExington 2-4566)

Chicago: 549 W. Washington Blvd., (Central 6-0545)



nozzle permits interchangeable gas or oil-firing without changing the nozzle.

The new models include also a simplified air supply system, improved combustion and ignition programming controls and a blower-air channel design for quiet operation.

Wagner Load Testing Hydraulic Dynamometers

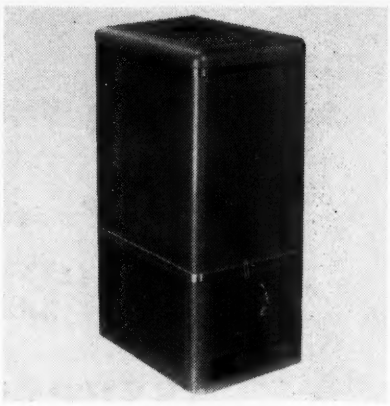
DYNAMOMETERS, designed and used by Wagner Electric Corp., St. Louis 14, Mo., now can be built to order for use by electric motor repair shops for accurate load-testing of motors. Assembly No. SA-483 is of 30 ft. pounds capacity, with adapters for ½, ⅝, ¾ and 1 inch motor shafts. Model SA-484 is rated from 30 to 300 ft. pounds capacity, with larger shaft adapters and Model SA-485 is a combination of the other two.

Sixty days is required for delivery of the dynamometers which are furnished fully assembled on a steel bench top which may be mounted on standard steel bench legs or on existing benches.

Bryant Oil Heater For Trailer Installation

MODEL 33 oil heater, announced by C. L. Bryant Corp., Cleveland 3, Ohio, is built to deliver heat at the floor level, designed particularly for heating large house trailers. Two rubber-mounted built-in blowers for heat distribution are controlled by separate switches and the heater returns cold air from the extreme ends of the trailer. A thermostat for automatic operation can be furnished.

Model 33 is a completely new heating plant, a compact, package unit for quick installation in place of present heaters. Finished in coppertone hammerloid enamel it blends with modern interiors.

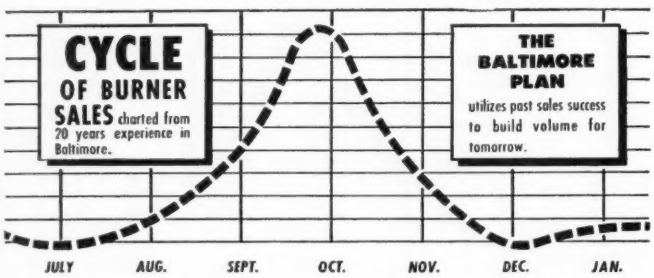


All metal baffles, easy lighting device, shut-off valve and safety features recommend the heater.

◈

SURFACE COMBUSTION CORP., Toledo 1, Ohio, has issued a 12-page booklet, aimed at those planning or building homes, discussing "Janitrol" Triple Service hot water heating installations. It shows pictorially how the units may be used for convector or radiant panel hot water heat and supplying domestic hot water. Included are several oilfired models.

IT'S GOOD IN *BALTIMORE!*



IT'LL BE GOOD FOR *YOU!*

General Automatic's profitable *Baltimore Plan* can build sales for *your* market too . . . Now is the time to get in line . . . the line that'll go *up* on your sales chart . . . General Automatic has the facts and the know-how. Write today for the Baltimore Plan and facts about the complete G.A. line, including Conversion Burners, Boiler-Burner Units, Warm Air Conditioners and the much talked about FLOORLEVEL BASEBOARD HEATING.

GENERAL Automatic
EST. 1924

GENERAL OIL BURNER CORPORATION
2300 Sinclair Lane, Baltimore 13, Md.

BOOK SHELF

BASIC SERVICE TEXT FOR PRESSURE TYPE BURNERS

This manual was prepared by G. T. Kaufman, technical secretary of the Oil Heat Institute of America, and is intended for basic training of installers and service men in residential oil-heating. 216 pages. Paper covers.

$2.

REDUCING FUEL OIL BILLS

This booklet will help you show home-owners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit.

50c

OIL HEATING HANDBOOK

Revision of famous text by Han A. Kunitz giving complete data on all phases of oilheating. An indispensable guide to sellers and installers of equipment. 456 pages.

$5.

Because of the thousands of small orders we receive we ask that cash, stamps, money orders or checks be sent with all orders.

HEATING PUBLISHERS, Inc.
232 Madison Ave. New York 16, N. Y.

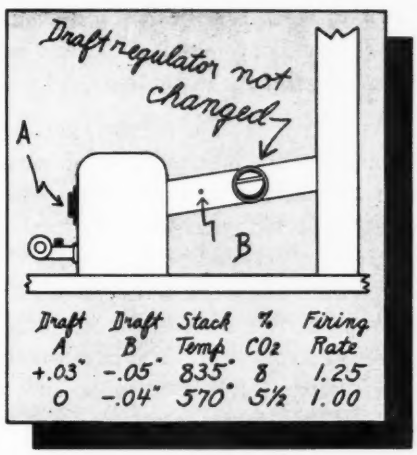
Reader's Problems

Q. New in the last heating season at combustion testing, may we have an explanation of the accompanying test readings (see diagram). First started, the furnace worked well at 5½% CO_2 and 1.00 gph. Now it causes soot and odor complaints, since lately because of other trouble we fire it 1.25 gph and get 8% CO_2. Draft "A" readings are in the flame door, "B" readings are in the smokepipe where we take CO_2 and stack thermometer tests.

E. S., Brooklyn, N. Y.

A. First, you made an error in not trying to adjust for greater draft when you increased the firing rate. Try to get .03" over-fire draft again by setting the smokepipe draft regulator higher, if necessary keeping it closed.

B. The great increase in the draft-drop of the furnace (difference between your "A" and "B" readings), which occurred since you shifted from 1.0 to 1.25 gph, makes it seem as though the furnace flues have plugged with soot. The considerable increase in stack temperature gives the same impression.



Draft A	Draft B	Stack Temp.	% CO_2	Firing Rate
+.03"	-.05"	835°	8	1.25
0	-.04"	570°	5½	1.00

C. If the furnace is not plugged with soot, either the 1.0 gph nozzle gave a fire size much smaller than 1.0 gph, or the 1.25 gph nozzle now used gives a fire much larger than it should. Try the best 1.25 nozzle you can get.

* * *

Q. Is it better to install a highly effective fueloil filter, being added to a trouble job, at the 275-gallon oil tank or at the burner?

J. R. T., Peoria, Ill.

A. Where the burner is giving trouble because of dirty oil, you'd better locate the filter at the burner so that it will pick up dirt and scale in the piping from the tank to the burner. New jobs work well with the filters at either location.

* * *

Q. Within our organization there is controversy as to the efficiency of convector radiation compared to cast-iron radiation. In some cases it is the feeling that cast-iron holds the heat longer and costs less to operate. We would appre-

He'll be a

BETTER SERVICEMAN

for Reading

BETTER OILHEATING

This new, enlarged edition is a practical book for servicemen to read at least once and also makes a good reference source for service problems. It's a compilation of articles thoughtfully selected from Fueloil & Oil Heat.

Bound in heavy paper covers. 8-1/2 by 11. There are 110 pages & nearly 140 illustrations as well as numbers of tables & short service hints. **$2**

Please send check with order to make it unnecessary for us to bother you with a billing.

HEATING PUBLISHERS, Inc.
232 Madison Avenue New York 16, N. Y.

IT'S EASY TO STOP RADIO INTERFERENCE

From Oil Burners!

The whole "trick" in stopping radio and television interference effectively is to have the right filters and know how to use them properly. Sprague interference filters are tops for the job—and you can install them fast and easily in either old or new oil burner installations. Sprague Bulletin C-378B tells the story. Write for yours today!

SPRAGUE PRODUCTS CO.
(Distributors' Division of Sprague Electric Co.)
North Adams, Mass.

SAVE TIME ON MOTOR CAPACITOR REPLACEMENTS

The speed of the motor and its horse power rating are all you need to know to select a safe, long-lasting Sprague motor capacitor replacement. Write for free Sprague shop wall chart C-900 and Sprague pocket guide C-901.

ciate your comments and advice.
C.S.S.I., St. Albans, Vt.

A. Just as heated arguments seem to be inevitable in the discussions of different makes and types of automobiles, oilburners, boilers, etc., arguments such as yours arise regarding different types of radiation. Personal opinion based on different personal beliefs and experiences often is, also almost inevitably, an important factor.

We can answer definitely the question you bring up by your mention of efficiency and fuel costs or operating costs. Installed in accordance with the manufacturers' instructions, good convector-type radiators will not be less efficient, and will not run higher fuel bills, than other types of radiation. A radiator would be 100% efficient if it gave properly to the room all the Btu's given the radiator by the steam or hot water which heats it. Especially in modern, insulated homes, few of the Btu's given radiators are really wasted. The one outstandingly good way to try to waste these Btu's is to let them escape through the outside walls behind the radiators, for unless the Btu's go that way they serve to heat the house. With properly installed modern radiators of all types, the loss of heat related to this is unimportant.

The heat-holding of heavier radiators you mention might be a factor with steam systems fired by burners controlled by old-fashioned room thermostats that gave long oilburner "on" and "off" periods. This factor becomes unimportant when modern types of hot water heating are used, and when modern room thermostats that give short "on" and "off" periods are used to control the heat output of the radiators.

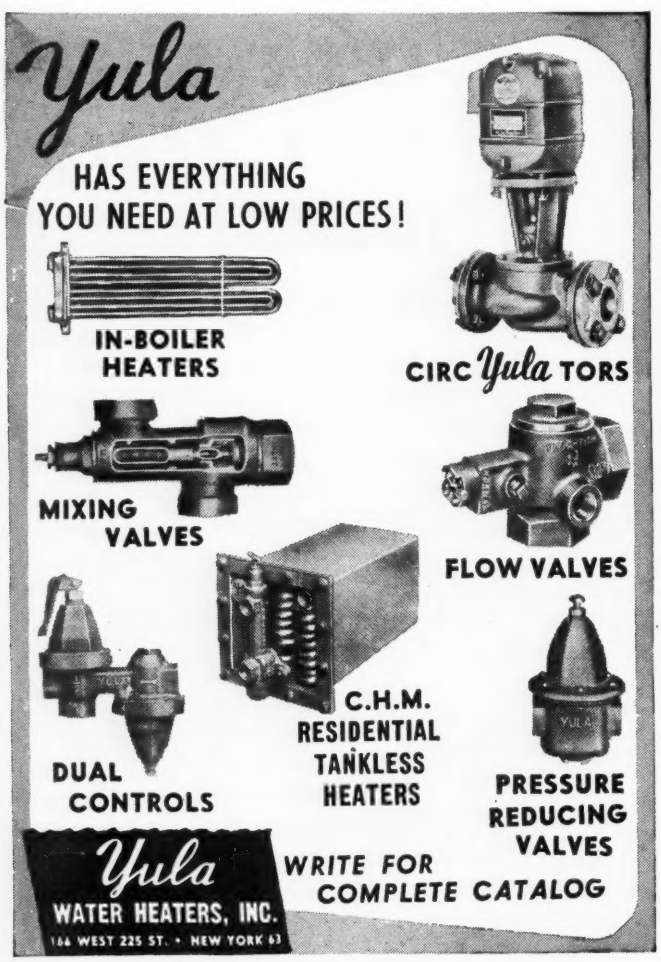
As the technical advantages and disadvantages of different types of radiation are not emphatic or can be offset in a particular system by one method or another, personal preference for the appearance of a particular type of radiation properly has become an important factor in recent years. You have to take a man's word for it when he simply states that he finds a particular type of radiation pleases his eyes more than another type.

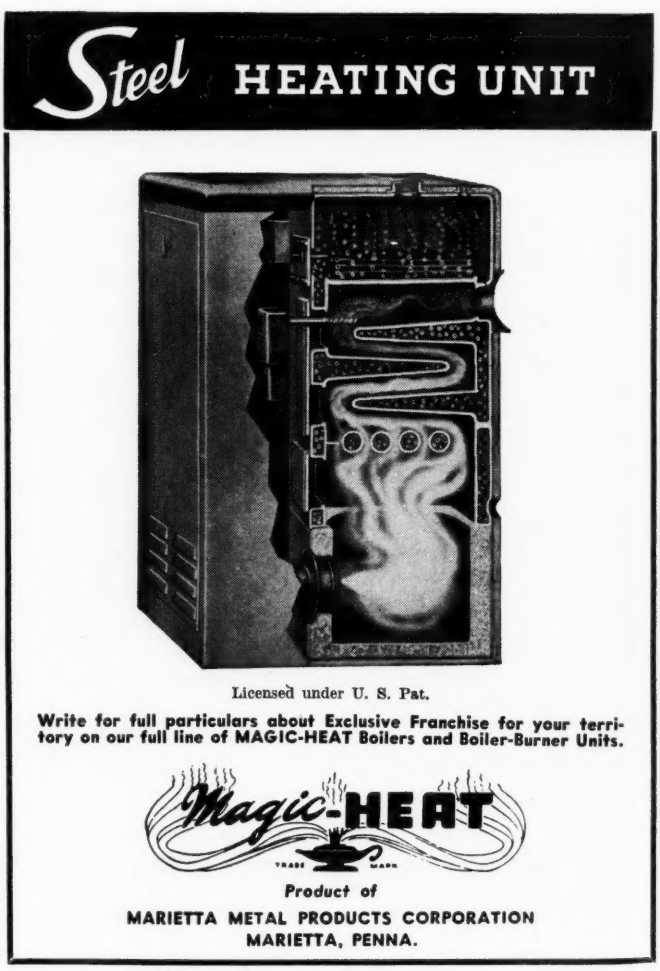
Q. At the Boston Oil Heating Show, an engineer in your booth told us we might experiment with air-charging what is probably an undersize expansion tank of a large hot water heating system. Please give us a note on the why and how of putting air in the tank.
O. E. R., Philadelphia.

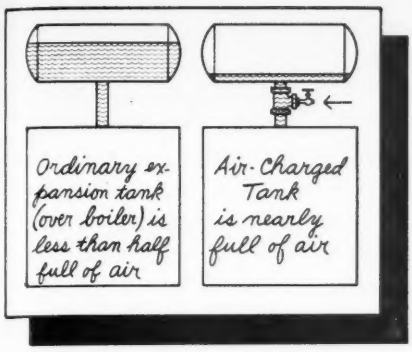
A. The accompanying diagram shows the why of the idea. Ordinarily you start with the system empty and the expansion tank full of air at atmospheric pressure. You wind up with the tank more than half full of water although this water, being incompressible, does no good in the tank. In one sense, the part of the tank full of water is wasted.

You can use an automobile tire pump to air-charge the tank. If you don't want to work at pumping, use a suitable bottle of air, charged at a filling station.

Obtain from a water pump supply house a fitting with a $\frac{1}{8}$" ipt connection at one end and a tire valve connection at the other end. Screw this in the tank or a pipe fitting just under the tank. Provide a globe valve or hot water radiator vent valve just under the tank, as




Steel HEATING UNIT
Licensed under U. S. Pat.
Write for full particulars about Exclusive Franchise for your territory on our full line of MAGIC-HEAT Boilers and Boiler-Burner Units.
Magic-HEAT
Product of
MARIETTA METAL PRODUCTS CORPORATION
MARIETTA, PENNA.



the arrow shows, so you can check and make certain you have not put too much air in the tank.

With the system cold and the minimum pressure on it, put in the tank enough compressed air to fill it, if necessary letting some water out of the system as you put in the air. Wind up with the tank full of air while there's minimum pressure on the cold system.

Thus air-charged, the tank serves as well as a tank of more than twice its size but filled with water and air in the usual manner. However, use the idea only in a pinch, after an undersize expansion tank has been installed by error, because (a) there's bother to the air-charging, (b) each time the system is drained the tank should be charged again, and (c) if for any reason the pressure in the system drops below its usual minimum, some of the air will escape from the tank and find its way to the radiators.

* * *

Q. With a typical pressure burner, what causes a heavy deposit of carbon on the outside of nozzle and nozzle adapter? This deposit eventually shorts the igniters, also grows so the spray hits it causing smoke. I've tested for poor cut-off by disconnecting a line at the pump, and changed nozzles again and again. Nozzle is 1.25 gph. Would appreciate any advice you can give.

T.C.R., Ferndale, Mich.

A. Probably the nozzle is so hot at times that when the burner stops the few drops of oil that normally dribble from the nozzle, even with proper action of the shut-off valve, are turned to carbon while drooling down over the outside of the nozzle. The trouble is not uncommon. It may relate to burner design, for the particular burner model may give higher nozzle temperatures when hard-fired than certain other burners, or may not give the rapid cut-off of oil given by certain other burners. Any steps that will give snappier, sharper cut-off when the burner stops will decrease the tendency of the nozzle to become coated with carbon. If the shut-off valve action seems lazy when studied with the help of a flame mirror, consider switching to a special fuel unit that gives especially sharp cut-off. Sharper cut-off often can be gained by taking steps to decrease the amount of oil stored in the spaces between the fuel unit and the nozzle when the burner is idle. Fill the space in the line to the nozzle, for example, with a metal rod slotted only enough to provide ample oil for the nozzle.

Any factor that increases nozzle temperature increases the tendency of a burner to give this trouble. Perhaps you can use different adjustments of the air-handling parts in the gun tube, so can reduce the nozzle temperature. The use of different air-handling parts, which cool the nozzle, may cure your trouble. Again, the trouble may be caused sim-

REMOVES MOISTURE
NON-TOXIC
NON-INFLAMMABLE
NON-CORROSIVE
Cosmiclene
FUEL OIL TREATMENT
FOR HOME AND INDUSTRIAL USE
COSMICLENE FUEL OIL TREATMENT has been tested and approved by home and industrial users over a period of years. It is the best method of preventing Oil Burner breakdowns, due to sludge, tar and carbon.
COSMICLENE eliminates objectionable oil odors, stops inside rust and corrosion and insures free and clear burners.
Now available in pints, quarts, 1, 5 and 55 gallon drums.
MORE HEAT from LESS FUEL
OLDE FORGE PAINT & REFINING CORP.
214 WEST 65th STREET • NEW YORK 23, N. Y.

PREFERRED
DRAFT-A-JUSTORS
Cut Fuel Consumption by
10% TO 30%

The *Preferred* Draft-A-Justor is the original, patented Draft-A-Justor . . . improved to include the latest in engineering developments.
Stainless steel bearings and weather resistant metals provide long-life service without breakdown due to rust or wear . . . assure *continuous* fuel savings.
Millions now in satisfactory use.
WRITE FOR DESCRIPTIVE LITERATURE AND TRADE PRICES.
SIZES
Store, domestic and commercial sizes from 4" to 24" in diameter.
Industrial sizes from 2' x 2' to 5' x 12'.
PREFERRED UTILITIES MFG. CORP.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

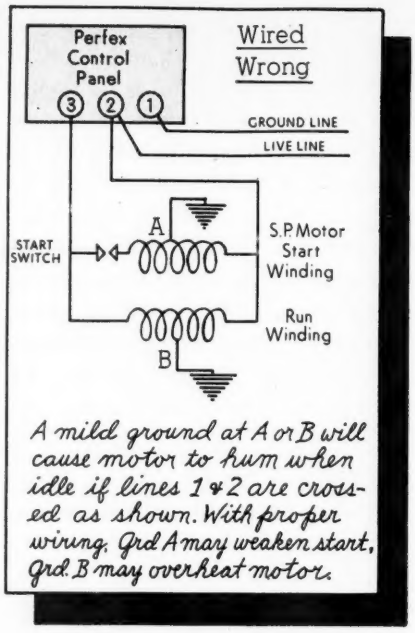
ply by over-firing a given size firebox, or by the furnace or boiler being overloaded with the result that the burner runs many more hours a day than is usual, for either of these factors can cause the nozzle temperature to be improperly high.

One or more of the atomizing slots often becomes plugged by carbon when a nozzle becomes too hot. The improper spraying of oil that results can cause the flame to burn too close to the nozzle with the result that carbon is formed on the outside of the nozzle by the one or two drops of oil that might normally trickle from the nozzle after the burner motor stops.

* * *

Q. I encountered trouble on a conversion job this morning. The burner motor hummed when the thermostat was not calling for heat, but ran all right when the thermostat was calling for heat. Examining the Perfex stack control, I found the hot and ground sides of the line reversed on terminals #1 and #2. When changed the trouble was remedied. Not installed by me, this job has been in operation three or four years.

C. A. W. *Coatesville, Pa.*


Perfex Control Panel
3 2 1
Wired Wrong
GROUND LINE
LIVE LINE
START SWITCH
A
S.P. Motor Start Winding
Run Winding
B
A mild ground at A or B will cause motor to hum when idle if lines 1 & 2 are crossed as shown. With proper wiring, Grd A may weaken start, Grd B may overheat motor.

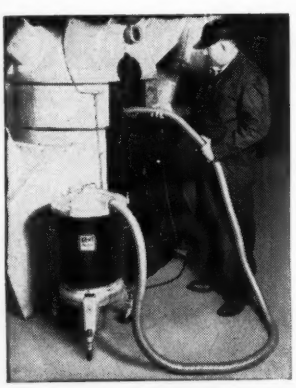
A. Check the motor. Leave it on the burner, disconnect its two 110-volt input wires from the regular wiring, and then touch a live 110-volt wire to each of the two motor input wires or terminals. With 110-volts applied to one of its input wires and the other input wire not connected to anything, the motor will hum as it did when you had the trouble on the job. That probably will prove there is trouble in the motor that permits current to flow from insulated parts of the motor to the motor housing and to ground. The motor housing is properly connected to ground, of course. The ground in the motor is caused by dampness or by a breakdown of insulation in the motor. There's a fair chance that the job will run satisfactorily as you left it, but to insure dependable operation and make certain the motor will not be damaged or burned out, you should check it for an internal ground and have it repaired by motor experts if you find it has such a ground. If the motor has no ground, check all the burner wiring and controls for the ground.

* * *

Q. Both in selling and installing burners and in servicing them, we encounter chimney draft problems because as our sketch shows the chimneys are lower

It pays to buy a good tool . . .
It pays to buy a

KENT



DOUBLE SUCTION
Furnace Cleaner

Long life with fewer breakdowns! You can depend on KENT design, quality, and workmanship to do the job you want, when you want it done!

KENT Features

- No outside dust bag!
- No soot passes thru fans!
- 2 fans—powerful suction, less r.p.m.!
- Strong, yet light—easy to carry!
- Easy to empty dust bag!
- Rugged Construction!

BUILT TO LAST!
Backed by 36 Years' Experience

It will pay you to see the KENT before you buy!

THE KENT COMPANY, INC.

434 CANAL STREET • ROME, N. Y.

Representatives in Principal Cities

MEMBER OF THE OIL HEAT INSTITUTE OF AMERICA, INC.

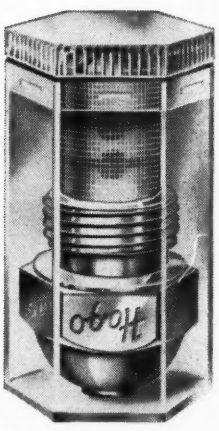
FOR BEST

PERFORMANCE

USE

HAGO

PRECISION NOZZLES



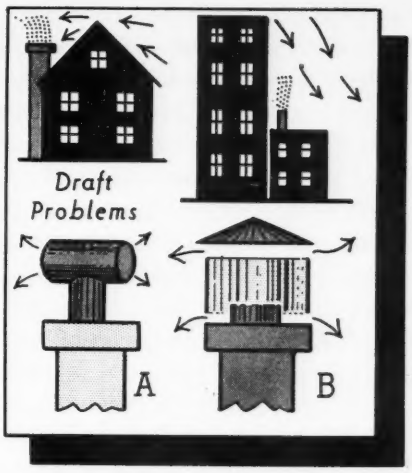
HAGO PRODUCTS

1281 SPRINGFIELD AVE., IRVINGTON 11, N. J.

than the peaks of the buildings or much higher buildings are next door. When the wind blows the wrong way there is poor or no chimney draft. Smoke, soot, and odor complaints naturally result from this. Houses on the side of a hill and under tall trees give the same trouble.

Trying out chimney top draft-improvement devices which we make ourselves, we boil down to the designs we show as "A" and "B." Proper dimensions for these are the problem. With "A," how long should the horizontal pipe be made, and of what diameter compared to the flue? With "B," how large should larger vertical pipe be? How about sizes of the open spaces at its top and bottom?

G. M. D., New York.



A. Although poor draft and downdraft caused by the factors you explain can be helped by installing special chimney tops, we know of no dependable collection of data to guide you in selecting the proper designs and dimensions. Outright guessing about proper designs and dimensions is likely to be the result of failing to make many tests on quite a number of actual installations. As it is not sensible for you to do extensive design, development, and testing work just to guide you in making a dozen or two of these devices, we recommend that you try to locate chimney top devices which have been developed by specialists. The best devices of this type which you can buy undoubtedly are far better than anything you could design and manufacture in a hurry.

Q. I have installed in my own home a floor panel system of copper coils imbedded in concrete. After a while a couple of leaks developed. Now, this year I built an addition to my house and dug up the concrete at the leaks to repair them.

A manufacturer's representative laid out the system for me and noted that when necessary to drain the system it would have to be blown out. Well, I realize now that was quite a statement. I spent two weeks getting the water out using assorted compressors and pumps. Finally succeeding in resoldering the leaking joints, I tested them with 90 lbs. air pressure. Nothing leaked so I refilled the system with water. A week later an old leak broke out again.

I understand that boiler-seal or boiler-solder will not do the trick on copper, so here I am. What is your suggestion?

C. A. W., Coatesville, Pa.

A. The use of the proper solder and flux, correct technique in soldering, and thorough testing is producing thousands of radiant heating systems entirely and

When you sell...

Gulf Fuel Oil...

You're selling...

clean heat, comfort!

Gulf Oil Corporation • Gulf Refining Company

DIVISION SALES OFFICES:

Boston • New York • Philadelphia

Pittsburgh • Atlanta • Toledo

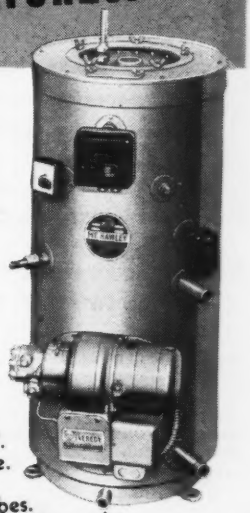
GULF

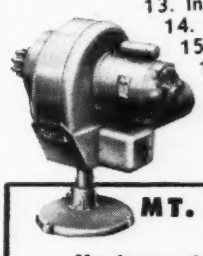
fueloil & oil heat

New Model Boilers WITH 17 PLUS FEATURES!

In time for the profitable selling season here is a performing quartet of new Mt. Hawley Boilers. No other boiler has this array of 17 features, to make these the leaders:

1. Convertible—oil or gas.
2. Added heating surface.
3. Wet leg and wet base.
4. Higher efficiency.
5. Increased flue area.
6. Easily drained coil.
7. Greater capacity coil.
8. Coil—tankless or tank heater.
9. Stack temperatures around 400°.
10. Improved rounded appearance.
11. Spiral inserts in all tubes.
12. Completely submerged tubes.
13. Increased weight—up to 150 pounds.
14. More tubes of same dia. as former models.
15. Increased combustion space.
16. Far greater value—no price increase!
17. New "Turret Top," for easy cleaning.





Be ready for the Fall rush — hurry your order for stock. Cutaway display models available!

MT. HAWLEY MFG. COMPANY

Mt. Hawley Airport, Peoria, Illinois.

Manufacturers of a complete line of conversion oil burners .65 to 20.00 g.p.h.

seemingly permanently free of leaks. Especially where leaks recur after they have been located and repaired, serious shortcomings exist in the material or technique employed in the efforts to make tight joints.

The heartaches, expenses, and troubles caused by leaks create a wish that some liquid could be injected into a leaky system with the result that, like magic, the system would become as tight and good as though every joint had been soldered properly. Heating engineers in general declare that up to now this wish has found no fulfillment. Readers of FO&OH who have experimented with using leak-sealing liquids in leaky radiant heating systems are invited to report on the results so that summaries of these can be published.

It would be best if you uncovered the leaky joint again and made it tight. No other method for arriving at even temporary tightness can be recommended; and you want your system tight for years and years. First, double-check to make certain you are using the proper materials for soldering. Second, review your soldering tools and methods to make certain you are using the best available to you. Third, take apart your finished joint and examine it to make certain good, clean, new solder has found its way to every spot it should occupy in the joint, and then reassemble the joint painstakingly. Fourth, test the system by putting 250 lbs. of air pressure on it for three days and making certain there is no drop in pressure caused by a leak.

* * *

Q. What can be done when a furnace-duct system heats the house properly in coldest weather only with the air filters removed?

C.J.N., Milwaukee.

A. Check on the possibilities of running the circulating blower at higher speed by using a larger pulley on the motor shaft of a belt-driven blower. If you are a perfectionist, you might be satisfied only with the results obtainable by installing a blower of greater capacity, able to develop sufficient suction to draw the required amount of air through the filters. The installation might, on the other hand, be of a design which permits easy installation of air filters having two or three times the area of those now used. Again, check on the possibility of switching to air filters which operate under unusually low pressure difference. Either with or without a slight increase in the speed of the circulating blower, special filters may solve your problem.

* * *

Q. Is 90 or 100 lbs. the correct standard pressure for a burner atomizing nozzle?

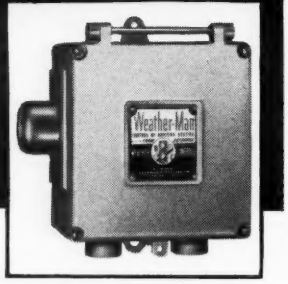
C.F.G., Brooklyn, N. Y.

A. Consider both pressures as about correct, as there's too little difference between them to make appreciable difference in the operation of most pressure burners. However, 100 lbs. pressure is mentioned more often, as usual for pressure burners, than 90 lbs. Certain authorities give the service man much rope, when preparing instructions on proper atomizing pressures. They indicate that for special reasons, or to obtain best possible performance and dependability of operation, an expert may set for atomizing pressures as low as 70 lbs. and as

WHERE ELSE CAN YOU FIND AN

"OUTDOOR" CONTROL

. . . so ideal for large buildings, yet priced so low that residences everywhere are using it.



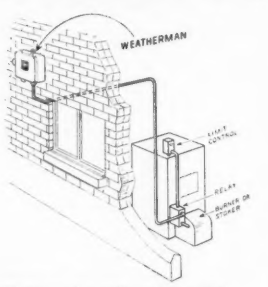
SAVES FUEL FOR OWNERS ...MAKES MONEY FOR YOU

Never before a fully automatic "outdoor" type control priced so low! Here's comfort, economy and fuel conservation for the residence or larger building at no more than the cost of an ordinary thermostatic control. A genuine opportunity to make substantial profits.

Does all these things automatically

1. Changes the time of morning start-up and night shut-down as the weather changes. 2. Regulates day heating to keep indoor temperature uniform. 3. Shuts off heating when outdoor temperature rises above 65°. 4. Use with coal, gas or oil in hot water, steam or warm air systems.

3 CONTROLS IN 1



Thousands of successful installations in every part of the country.

DISTRIBUTORS: WRITE FOR FRANCHISE INFORMATION

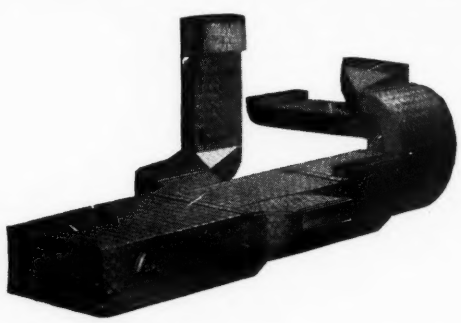
THE WEATHER-MAN

AUTOMATIC DEVICES CO., INC. • 53 W. Jackson Blvd. • Chicago 4, Ill.

"SNAP-RITE"

PRE-FABRICATED

AIR DUCT AND FITTINGS



A Complete Line of Streamlined Duct and Fittings
Prompt Shipments from Well Assorted Stocks

WRITE OR WIRE FOR CATALOGUE

GRAY METAL PRODUCTS, INC.

P. O. BOX 1449

ROCHESTER 3, N. Y.

high as 150 lbs. You should try to follow the instructions and suggestions given by the manufacturers of the nozzles, fuel units, and oilburners you service, however.

* * *

Q. What is the advantage and the disadvantage of the one-pipe hot water heating system compared to multi-pipe systems? What is the limitation of size for the application of the single-pipe system? How many radiators can be provided in a one-pipe system?

T.H.G., Wallingford, Pa.

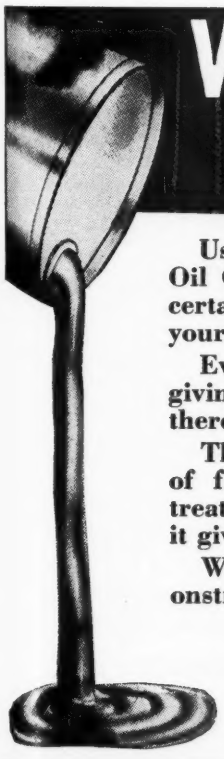
A. For typical residences in which circulators are used, one-pipe hot water systems have so many important advantages that few two-pipe systems are being installed today. One-pipe systems cost much less than two-pipe systems, have simpler and neater appearance in the basements, and have relatively low piping heat losses.

The one-pipe system has the characteristic of providing slightly lower temperatures for the radiators at the ends of the circuits; where because of the design of a particular system this becomes an important factor, the radiators which will be cooler than the hottest radiators are properly sized larger to compensate for this. Because of this temperature drop characteristic of a one-pipe circuit, where several unit heaters are to be connected to one circuit serious consideration should be given to using the one-pipe and the two-pipe systems. For unit heater installations and other special systems, often there are advantages in making use of the definite difference in head pressure between the supply main and the return line of a well-designed two-pipe system.

In answer to your second question: With relation to heating large homes requiring up to, say, 10 gph firing rate, there is no limitation of the size of a single-pipe system because, with each circuit properly designed and with a circulator of proper capacity, as many circuits as needed can be connected in parallel with each other. It may be reasonable to use, in a particular instance, four circuits, each connected to about 800 sq. ft. of radiation, for example. One circulator may be used for the four circuits. To go further, a circulator of twice the capacity may be used for eight such circuits, and the idea may be expanded to any degree by using additional circulators, each connected to a similar load.

The answer to your third question is obtained by following the line of thought explained above. Using sufficient circuits and circulator capacity, any number of radiators can be used in a one-pipe system.

We suggest that you obtain data from the leading manufacturers of circulators on the circuit capacities of one-pipe systems. A circuit of a given pipe size and circulator size matches some certain maximum heating load. You may decide, after studying the characteristics of a particular line of hot water heating specialties and circulators, to carry a 2,200 sq. ft. radiation load by using a 2″ circulator and 2″ one-line circuit. If you have, say, six such circuits in a building, you might decide to use six 2″ circulators, or one circulating pump with six times the capacity of the 2″ circulators you have in mind.



WASTE LESS FUEL OIL

Use Alken-Certified Even-Flo Fuel Oil Conditioner in your oil and be certain of obtaining the most for your money.

Even-Flo improves atomization, giving more complete combustion, thereby reducing soot deposit.

That over *1,000,000,000* gallons of fuel oil have been successfully treated with Even-Flo is proof that it gives "TOPS" in results.

Write for booklet and *FREE* demonstration in your fuel oil.

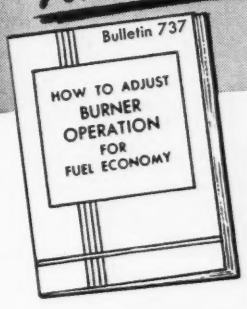
ALKEN-MURRAY CORP.

131 E. 23rd St.
New York 10, N. Y.

Individual Water Treatments—Soot Removers

Certified Alken
EVEN-FLO
FUEL OIL CONDITIONER

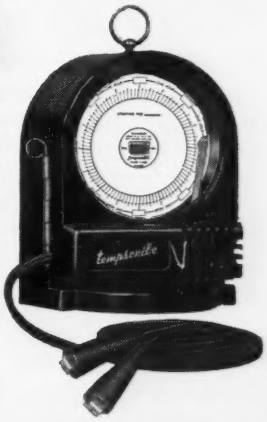
Fuel-Saving SERVICE Simplified



Fuel economy and heating comfort depend on proper fire size more than on any other single factor. Correct adjustment of burner on-and-off cycling and gph-rate can be made quickly and dependably by an amazingly simple test which requires only the recorder shown below and takes less than 20 minutes of a service man's time.

FREE FACTS

The simple procedure of the heat test for adjusting burner operation for minimum fuel consumption and maximum heating comfort is clearly and completely described in the bulletin above. The bulletin also explains how this heat test dramatically demonstrates the need for replacement of an obsolete installation thus opening the way for profitable replacement business. Write for your free copy today.



MEMBER OHI OIL-HEAT INSTITUTE OF AMERICA

BACHARACH Industrial Instrument Company
7000 Bennett Street - Pittsburgh 8, Pa.

Gas On Wheels

(Continued from page 64)

If you are wondering what it takes to get into the liquefied gas business, listen to Mr. Yeomans again:

"I would strongly advise against attempting to enter the LP gas business as a dealer without $50,000 as an absolute minimum, and in these days it is advisable to have $75,000 easily available. The dealer will need bulk storage with a minimum capacity of 20,000 to 30,000 gallons if he plans a business of sufficient size to be profitable, and this type of storage must be built to ASME specifications for 200 pounds working pressure. Depending on the land value, labor cost and local regulations, such a bulk plant will cost $10,000 to $12,000. It must be on a rail siding with facilities to pump off a 10,000-gallon tank car as needed.

"Fueloil dealers who have a going business that can absorb all the administrative and general overhead probably will start to show a profit over their direct costs with about 200 LP gas customers averaging 1,000 gallons a year. Dealers starting cold, with no other business to carry the overhead might need 500 such customers before they would show a profit. Such estimates, of course, are subject to variation due to the size of the average customer demand, the supply contract the dealer can make, size and character of his market and similar considerations, not to mention the care with which he manages his business and watches his costs."

Required reading for any dealer contemplating getting into the business is Pamphlet 58 of the National Board of Fire Underwriters. Just as Pamphlet 31 covers oilburning equipment, Pamphlet 58 will tell you what are accepted minimum safety standards for LP gas. Work now is going forward to revise this pamphlet and expand its coverage.

More important to the dealer contemplating entering the liquefied petroleum gas business are his chances of a successful and profitable venture. This will depend more on the potential market and the vigor with which he attacks it than on the technical aspects of the business. A source of gas supply must be found (probably with one of the major oil companies), the retail selling price determined and a comparison made with other available fuels. Though the greater market potential probably will be found beyond the city gas mains, the possible industrial users should not be overlooked.

◈

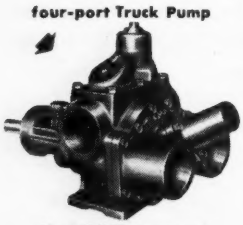
Willard M. Wright has moved from Boston to the company's general office in Philadelphia to become assistant general sales manager, Sun Oil Co. *Richard D. Drysdale* has been named to succeed Mr. Wright as New England Regional Manager and *John C. Weidman,* district manager at Revere, Mass., succeeds Mr. Drysdale as assistant regional manager for the middle Atlantic states.

L. B. Davis, manager of Socony-Vacuum Oil Company's fueloil and gasoline sales department, has been named manager of the supply and distribution division of the foreign trade department.

Ray A. Reed has been appointed by Surface Combustion Corp., Toledo 1, Ohio, as district salesman in the Minneapolis territory, to specialize on sales and servicing of Janitrol heating units.

a GRANCO pump on the job is like money in the bank!

Model DEE 2-inch, four-port Truck Pump



Model DEE mounted, with oil-tight gear housing

Ask a GRANCO Pump owner — he'll tell you "*they save me money!*" Put a GRANCO Pump on your truck or pipe line and you'll say the same. Because . .

WITH GRANCO YOU GET

★ Low initial cost. ★ Lower installation cost—flexible four-port design mounts in any position. ★ More GPM per lb. of pump weight. ★ Less maintenance—single rotor, fewer moving parts. ★ Long, trouble-free service. ★ Integral dash-pot relief valve.

BUY GRANCO PUMPS—YOU'LL BE MONEY AHEAD!

Write today for new Pump Bulletin 114E, 126B

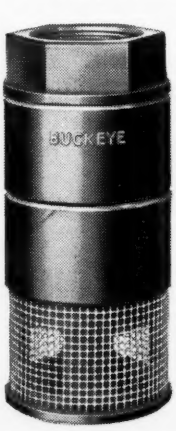
GRANBERG CORPORATION **Granco**

OAKLAND 8, CALIFORNIA ★ Makers of Rotary Positive Displacement Pumps and Meters for all Petroleum Products

Sales and Service at your service throughout the nation

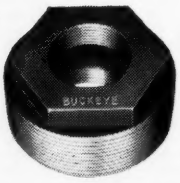
"IN THE TANK" ACCESSORIES *by* Buckeye

Oil men know this about Buckeye Oil Burner Accessories: That the name itself signifies quality, that accessories bearing this name can be installed and forgotten, that fine performance and long life are *built into* every Buckeye fitting. Here are a few selected from the Buckeye line:



← No. 439 Foot Valve
Double poppet. Seats, hand-lapped to disc for perfect accuracy, are the only moving parts. All brass construction. Full flow.

No. 438 Foot Valve →
Single poppet. Retain accuracy after years of use. Full capacity for unrestricted flow.



No. 441 Tank Bushing
Made of iron. Full length standard taper pipe threads. Convenient size hexes for quick installation.

For oil burner installations, Buckeye also makes fill caps, fill boxes, vents, sludge pumps, strainers, check valves and shut-off valves.

BUCKEYE IRON & BRASS WORKS, Dept. F
P. O. Box 883, Dayton 1, Ohio

Buying the Right Truck

(*Continued from page 58*)

sis careful consideration should be given to the correct length wheelbase to insure the proper distribution of weight of the truck tank, accessories and fueloil load. If you already have a tank, give your truck dealer full details such as, weight capacity, length, height, width, etc. If the tank has a rear hose and meter compartment, determine the length of the oil carrying portion of the tank for proper weight distribution and the overall length of the tank for determining the correct chassis length. If you want to compute the correct wheelbase yourself —this is the formula we use for conventional type trucks:

One-half the length of the tank plus the clearance between tank and back of cab plus the distance between back of cab and centerline of the front axle, equals: nine-tenths of the required wheelbase. This gives a weight distribution approximately 90 per cent on rear axle and 10 per cent on front axle.

It is important to know as accurately as possible what the complete loaded vehicle will weigh to be sure it is within the allowable state law for the license it will carry and to make certain the total weight does not exceed the maximum limit recommended by the truck and tire manufacturers. If you do not know the approximate weight of your tank these figures may help you:

1,000 gal. tank complete with
pump, meter, hose and reel 2,750 lbs.
1,500 gal. tank complete with
pump, meter, hose and reel 3,500 lbs.
2,000 gal. tank complete with
pump, meter, hose and reel 4,100 lbs.

The above are for two compartment tanks with skeleton skirting. No. 2 fueloil is usually estimated to weigh 7.3 lbs. per gallon and No. 5 and No. 6 fueloil —8 lbs. per gallon.

It is usually desirable to purchase a tank from one of the larger established tank manufacturers. The facilities required to properly build a truck tank are seldom available to the small local shops. The tank manufacturer should be given a body builder's print of the truck chassis (supplied by the truck manufacturer) and should submit a drawing showing the tank mounted on the chassis. He should also advise the total weight of the tank, pump and metering equipment. This information should then be given to your truck dealer so that he may determine whether the right size chassis has been specified.

Considerable loading time in the course of a year will be saved if you specify the minimum number of compartments required to handle the various grades of fueloil you expect to deliver. We seldom buy tanks of more than two compartments. Leak-proof flashing around the loading domes is very helpful in keeping a truck clean. The meter and hose reel compartment can be located in the rear of the tank or on the side. Both locations are satisfactory. We prefer the side because we like to save that two or three feet of vehicle length to make parking easier.

Full skirting and beaver tail shaped rears on tank trucks are strictly up to you. They add to the first cost and keep the sheet metal and paint shops busy. This is particularly true when such units

Oil Fired
WALL PANEL
HEATING
PUT 'ER THERE....
Especially designed for small homes — and with all the advantages. Thermostat control, ½ cc pilot, U. L. approved. A money-saving spacesaver.
Domestic offers a Dealer discount that can't be beat! Write now for complete details.

DOMESTIC MANUFACTURING CO.
201 Westlake Avenue North Seattle 9, Washington

SOMETHING REALLY NEW!

For Measuring

- Filter Resistance
- Air Velocity
- Furnace Draft
- Fans & Blowers
- Gas & Static Pressures

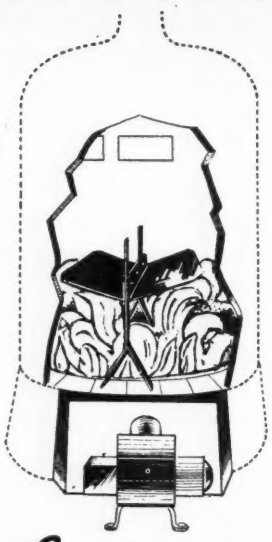
DWYER Bulletin 250 gives you full details. Write for it!

THIS IS REALLY IT . . . a pressure gage that's compact, long lasting, and highly accurate — with no bearings or links to wear out!

DWYER Magnehelic Gages, featuring a helical magnetic linkage, are sensitive to ¼ of one thousandth of an inch magnet movement. Give you Plus, Minus and Differential readings . . . cannot be damaged by over or under pressures high as 5 lbs. PSI. Portable and stationary models, with ranges from 0-½" of water up to 0-12" of water.

F. W. Dwyer Mfg. Co.
315 SOUTH WESTERN AVENUE, CHICAGO 12, ILLINOIS

SAVE
UP TO
25%
★
MORE
HEAT
★
LESS
FUEL
★



MAKE FRIENDS THROUGH FUEL SAVING

STOP EXCESSIVE FUEL LOSS AND BUILD CUSTOMER CONFIDENCE — PROFIT WITH FYR-DISK FUEL SAVERS

Thousands of Fyr-Disk chrome-steel baffles are now in use—their value and utility is proven. A carton of these light-weight, (4 lbs.) quickly installed (10 Min.) fuel savers should always be in every serviceman's truck. They provide an effective way to eliminate smoky fires by improving combustion, lowering stack temperatures, retarding flow of heated gases. Reduce nozzle size by ¼ghhr and prove to your customer a Fyr-Disk pays for itself in less than one season.

You can really double your money with the generous dealer discount. Retail price of 12" Fyr-Disk is $9.75. They are individually packaged and sold to the trade in cartons of 5. Immediate shipment. Write for price schedule and full details.

FYR-DISK is currently advertised in the N. Y. Times and Christian Science Monitor

SOLE MANUFACTURERS AND DISTRIBUTORS

Bridges Engineering Co., *17 PRESCOTT ST., ARLINGTON 74, MASSACHUSETTS*

operate in congested traffic areas and where they encounter ice and snow conditions on the roads. They also make maintenance and inspection of the truck chassis more difficult. They do dress up the truck. Perhaps your advertising department will pay the added cost. We use so-called "skeleton skirting" which comes down to the top of the chassis frame.

There are numerous good fueloil pumps and meters on the market. We would strongly recommend that you purchase this equipment from the dealer who provides the best service. When trouble occurs on these units your fueloil truck is out of service and if it is a cold day you want to get it back in service in a hurry.

Be sure you buy a pump and meter large enough to discharge oil at the maximum rate pratcical for delivery to your customers' tanks. We use as a minimum 35 gallons per minute. If you have a high percentage of large underground tanks, you may want to go to 50 or 65 gallons per minute. We use 300 gpm pumps on our heavy oil trucks. Such pumps are usually driven by the truck engines.

Power is taken from the engine by means of a power take-off mounted on the side of the transmission. The proper operating speed of the pump should be determined from the dealer and care should be taken to select a power take-off that will operate at that speed without racing the engine. It has been customary to mount the power take-off control in the cab of the truck. The driver climbs into the cab, depresses the clutch, engages the power take-off, releases the clutch, gets out of the cab and makes his delivery. He then has to climb back into the cab, disengage his clutch, take the pump out of gear and release the clutch, etc.

About ten years ago we hooked up a 6 inch booster brake cylinder to the clutch and connected it with copper tubing and a three way valve to the intake manifold of the engine. We mounted the three way valve together with the power take-off controls on the side of the truck near the hose reel and meter. This set-up proved to be surprisingly free of trouble and saved a lot of wear and tear on the drivers, transmissions and the power take-off gears and we have since standardized this method on all of our new trucks.

It is desirable to mount the pump so that the shaft lines up as nearly perfectly straight as possible with the power take-off shaft. If this can be done it can be connected by means of a drive shaft equipped with a roller bearing universal joint at each end and a splined coupling in between, which should operate very satisfactorily. If, however, the universal

ANNOUNCING

A specialty sales seminar for oil equipment sales techniques — motivations — public speaking — sales psychology — oil burner and equipment orientation under joint sponsorship of

WALTER HERVEY JUNIOR COLLEGE

and

OIL HEAT INSTITUTE OF AMERICA

Classes begin September 26th

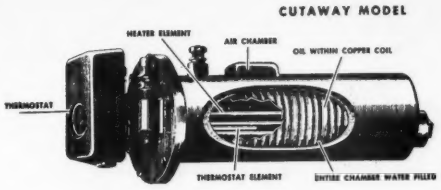
Write or call
Dean, Evening Division
WALTER HERVEY JUNIOR COLLEGE
15 West 67th St., New York, EN 2-8117

Write for Your Copy of

A. R. WEBBER CO.,
1949-50 CATALOG

Everything for the Oil Burner Trade

A. R. WEBBER CO., INC.
DEP'T. 61 **NEW HAVEN, CONN.**



VISCOS-O-TROL

(PATENTS APPLIED FOR)

THE GREATEST ADVANCE IN HEAVY OIL BURNER DESIGN IN TWENTY YEARS

VISCOS-O-TROL means viscosity control of oil by temperature control.

VISCOS-O-TROL with a rotary oil burner means consistent flame volume, consistent peak efficiency, and performance, regardless of temperature of oil in tank or when delivered.

The VISCOS-O-TROL provides a uniform flow of pre-conditioned and heated oil to the atomizing cup. Due to the oil being quite thin when heated it atomizes readily and burns with a clean, hot, smokeless flame.

The VISCOS-O-TROL pre-heats the oil differently than the ordinary heater inasmuch as the heater element is immersed in water instead of coming in direct contact with the oil. This prevents carbonizing of oil on the heater element with a subsequent loss of accurate temperature control.

The VISCOS-O-TROL controls temperature of oil to within 2 degrees F., whereas the ordinary heater in many instances does not control within 20 to 40 degrees F.

The VISCOS-O-TROL cannot accumulate sludge. Oil cannot be cracked, separated and gasified.

Performance superior to any heretofore attained is guaranteed with the installation of VISCOS-O-TROL. Oil heating engineers pronounce the VISCOS-O-TROL as the greatest major improvement in oil burner design in 20 years. Owners that have had the VISCOS-O-TROL installed on their existing burners enthusiastically support these assertions.

Every rotary burner installation is a prospect for a VISCOS-O-TROL. Dealer inquiries invited.

SUPERIOR ENGINEERING COMPANY **1817 Olive Way, Seattle 2, Wash., CA. 4400**

joints have to operate at very much of an angle, consideration should be given to one of the new flexible shafts for this purpose.

Power to drive the pump on tractor trailer units presents somewhat of a problem. Since the pump is mounted on the trailer, a drive from the tractor must be capable of flexing a full 90° while the truck is moving. Some operators have used a drive consisting of shafts, bearings and bevel gears which drives up through the fifth wheel. This drive, however, contains so many moving parts that maintenance is reported to be rather high.

One manufacturer of flexible shafts recommends this type of drive for the purpose but we have not had the opportunity of checking with any operator who has used them. The majority of operators in this area have installed small one cylinder, four cycle gasoline engines directly coupled to the pumps and mounted on the trailer.

This eliminates the complicatd drive from the tractor motor but it does not eliminate all the troubles. Another crank case must be checked for oil, another gas tank checked and filled, and another engine must be inspected and kept in good operating condition. Then, too, these small motors must be started by hand, usually with a rope starter and they don't always start, particularly on very cold mornings when the backlog of orders is greatest.

The tank meter should, of course, be protected by a strainer and should be used in conjunction with an air eliminator. Most meter manufacturers provide certain optional equipment such as ticket printers and pre-determined shut-offs. We have found both of these devices to be very worthwhile.

The printed tickets have virtually eliminated customers' complaints of shortages, and while the pre-determined shut-off is of no value in making an automatic delivery to a VENTALARM equipped tank, it is a great time saver on other types of deliveries, such as when a specific amount of oil is ordered, when a tank is not equiped with a VENTALARM and on buried tanks.

Hose Reel Experience

While there are a number of hose reels on the market, we are pretty well sold on the one equipped with ball bearings and driven by a chain and sprocket. Several years ago we equipped some of our hose reels with electric motors to provide automatic rewinding. These have been reasonably satisfactory but have required some service. More recently we have equipped some of our trucks that have air operated brakes with air operated motors for rewinding

RAJAH TERMINALS

FOR OIL BURNER SPARK PLUG IGNITION CONNECTIONS

Made in Two Styles

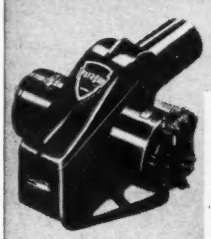
CRIMP TYPE and SOLDERLESS

Code No. C/T #11 Code No. S-SOS #11

THE RAJAH CO. BLOOMFIELD, NEW JERSEY

ONLY THE **Paragon Oil Burner** NONE BETTER

HAS THE NEW **Paratrol** COMBUSTION HEAD

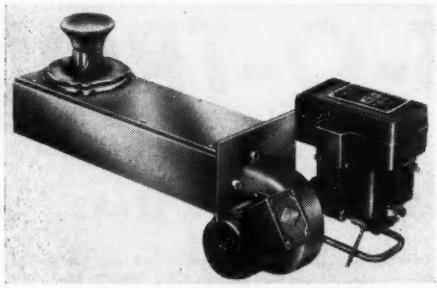


Paragon Oil Burner Corp.
75 Bridgewater Street, Brooklyn 22, N. Y.

Gentlemen:
Please rush me your dealer proposition today.

Name _____

Address _____



Write Us Today About

THE BURNER FOR LOWEST COST HEATING!

Look for the

KRES-KNO **Ball Flame**

VAPORIZING OIL BURNER

Low Initial Cost • Completely Automatic
Economical • Trouble-Free • Underwriters' Lab. Listed

KRESNO-STAMM MFG. CO. (America) Inc.
PALISADES PARK, N. J.
Kresno-Stamm Manufacturing Co., (Canada) Ltd.
1452 Drummond St., Montreal 25, P.Q. — Factory: Granby, P.Q.

the hoses. While we have found these somewhat noisier, they have required no service at all.

There is a new type of drive operated by the fueloil under pressure from the fuel pump, which we understand is very satisfactory, but we have had no first hand experience with such equipment thus far.

About twenty years ago fueloil hose was a major headache and a full year's service out of a length of hose was unusual. However, with the introduction of synthetic oil-resistant rubber this problem has largely been eliminated and today it is not unusual to get three or sometimes four years' service out of a length of hose.

There are two general types available. One has several all cotton braids and the other a single cotton braid stiffened with a wire wound circumferentially in the braid itself. While this wire wound hose may be somewhat more susceptible to damage if mishandled, it tends to flatten less and thus provide a better flow of oil while wound on the hose reel. It also has a smaller outside diameter, is lighter and thus more easily handled by the driver.

We equip our trucks with 100 feet of hose with the exception of those serving suburban areas, on which we use 125 feet of hose.

We believe that on all fueloil trucks the fewer coats of paint, provided it is good paint, the better the job stands up. We use one coat of prime and one coat of the best grade of synthetic enamel obtainable and we only have to paint our light oil trucks once every three years.

At one time we had trouble with our lettering wearing out long before the truck required painting and our painting contractor suggested a solution which has solved that problem completely. It seems that normally the lettering is done with a free flowing lettering paint which is not very durable. It is then protected with a thin coat of varnish. We now have our lettering done with the same high grade synthetic enamel which is used on the truck itself. This is not as easy to apply because it is not as free flowing but it is worthwhile trying to get your painter to use it. No varnish is used on this type of lettering.

◈

ECKHART MFG. CO., Roselle, N. J., in a data sheet pictures and describes the Cat-Comb-Spiralator catalytic combustion monitor head, an integral part of Korth gun type oilburners. A labelled photograph of the combustion head assembly highlights its features, with advantages explained in accompanying copy.

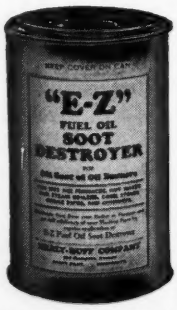
HARBISON-WALKER REFRACTORIES CO., Pittsburgh 22, Pa., covers in a small folder its refractories for domestic oilburners. Refractory combustion chambers are discussed, accompanied by a table of dimensions and counts for fuel consumptions from 1.0 to 5.0 gph. Insulating fire brick, fireclay brick, plastic fire brick, H-W castable refractories and Harwaco bond, high temperature bonding mortar, also are described.

E-Z SUMMER CLEAN UPS

E-Z Fuel Oil Soot Destroyer will clean many thousands of oil-fired furnaces this Summer. Its speed (one application does the job), its thoroughness in eliminating all soot, its safety and low cost per job, make E-Z a big profit item. (Good for fuel oil soot only.) Keep a 5 lb. Can in each service truck, always. Stock the 1 lb. Can for direct sale to customers. If your Distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. . . . List $1.00 ea.
No. 5 Pkg. approx. 5 lbs. . . List $4.50 ea.

Special discount to Distributors on quantity purchases, allows for extending regular discount to Dealers and Servicemen.



HEALY-RUFF COMPANY
797 Hampden Avenue • St. Paul 4, Minnesota

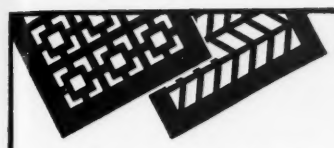
Herco has it!

WHAT, you say?

• **A low-cost Stainless Steel Oil Heat Unit for warm air systems. Offers your customers dependable automatic heat plus beauty, comfort and economy . . . in one low-priced package.**

• **A conversion burner that's really a dandy . . . with exclusive "under the hood" features that put sell in your sales talk.**

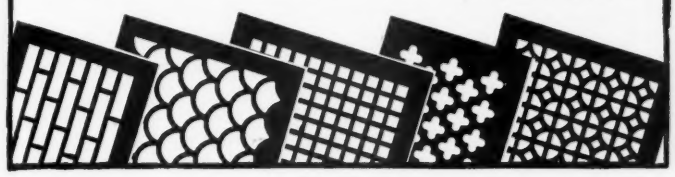
Write for literature
HERCO OIL BURNER CORPORATION, Lancaster, Pa.



Auer GRILLES

Stamped metal grilles in many designs, sizes to order for all purposes—air conditioning, ventilating, radiator enclosure, or concealment. In steel (or stainless), aluminum, brass, or bronze. Finished in prime, or special finishes or platings. Catalog "G" shows all designs, with dimensions, opening sizes, full scale details. Sent on request.

THE AUER REGISTER COMPANY *3608 Payne Ave., Cleveland 14, Ohio*



Famous for its SPIRAL efficiency

Burns # 3 Oil

THOUSANDS OF SATISFIED CUSTOMERS SINCE 1939.

JACKSON VERTICAN OIL BURNER

It burns oil at the Grate level, not in the Ash-Pit. It is easy to install, no combustion chamber to buy. It fulfills any Job, Domestic or Commercial. Best Bet for a Dealer who wants sales. Write for details.

AMERICO ENGINEERING CO.
6791 Jackson St., Baseline, Michigan

Pictures Help The Sale

(*Continued from page 71*)

Films to train sellers in product, as well as in the proper techniques for using the visual material;

to educate or inform distributive agencies (if the system is of that type), jobbers, agents, dealers;

to train salesmen employed by these same distributive agencies;

to dramatize the current advertising and promotional campaigns for all the above groups;

to reveal the features of new or improved products.

That visuals of whatever type, however, are only powerful *aids* to persuasion in the service of the seller working in a resistant market, is the generally accepted belief of the Nation's largest and most persistent users. The salesman still must do his stuff. But, that they do reduce the time and cost of making sales, the amount depending upon many local factors including nature of the product or service, is a matter of record. On the other hand, there is now a great deal of experience in this field, both as to the planning of the program from education to utility of the visual medium in the presence of the prospect and/or customer, and no expectant user can safely undertake such a program without such experienced assistance.

Visuals are not being used on the hit or miss basis any more, the pioneering era is over.

◈

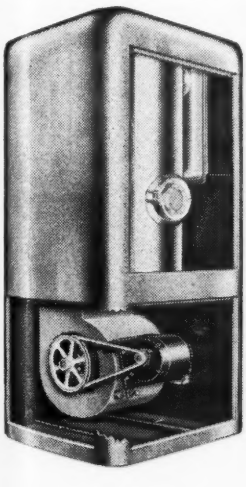
HEIL CO., Milwaukee 1, Wis., has issued a complete new catalog, covering its line of heating units. Both gas and oilfired models of furnaces and boilers are included, with cut-a-way views of each reproduced to highlight construction and operating features. Conversion oilburners also are featured in a similar way, with small drawings illustrating sales points for all units. The 12-page catalog has been prepared for the consumer.

WALSH REFRACTORIES CORP., St. Louis 7, Mo., captions a new bulletin on plastic fire brick "Here's Longer Life for Your Furnace Linings." Information includes views of refractory anchors and data on estimating requirements.

Oilheating Trends

(*Continued from page 11*)

few requests for quotations but few buyers, with most buyers looking for lowest prices" . . . "Low-priced gypsy burners and companies make it difficult for dealers with salesmen and overhead" . . . "Would like to know what percent mark-up other dealers use after cost and overhead." Edit. note: This is a difficult figure to get on a comparative basis principally because some dealers take most of their profit out in personal salary while others take modest salaries and thus minimize their overhead ratios. In the January 1949 issue appeared this analysis of the 1948 experience of some 700 oilburner dealers who sent in their figures: The average burner cost was $117; other installation material represented $100; installation labor was $48; and average selling price $422. This left $157 for gross profit which had to include all overhead, sales expense and profit. This gross profit figure represented 37% of the selling price or a mark-up of 59% over their material and labor costs.



Silent Sioux QUALITY PLUS PRICE
are UNBEATABLE in Today's Winter Air Conditioner Market!

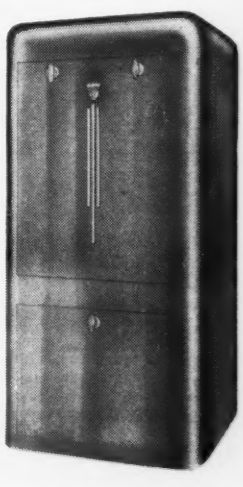
Silent Sioux's unbeatable QUALITY equals your top quality competition . . . betters them with lower PRICE! Silent Sioux's unbeatable PRICE equals your low price competition . . . betters them with top QUALITY! This Silent Sioux winning combination is the answer to all your competition. Complete "package" unit . . . easy to buy . . . economical to operate . . . easy to install. You'll also want to know about Silent Sioux "package" conversion burners. For greater sales and lower inventory—send for full details.

- **85,000 BTU OUTPUT . . . Heats the Larger 6 and 7 Room Home.**
- **FORCED DRAFT with FB-14 Silent Sioux Burner**
- **FORCED CIRCULATION at 1200 C.F.M.**
- **COMPLETE "PACKAGE" UNIT with burner, blower, belt, pulleys, limit control, fan switch, oil control, fused entrance switch, wall thermostat, and draft regulator.**

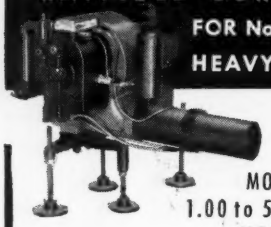
SILENT SIOUX OIL BURNER CORPORATION
Dept. FO99 Orange City, Iowa

Silent Sioux Oil Burner Corp.
Orange City, Iowa
Dept. FO99: At no obligation, send full information about Winter Air Conditioners and Conversion Burners.

Name .....
Address .....
City .....State.....



RAYFIELD BURNERS
FOR No. 4 or No. 5
HEAVY OILS



MODEL JR.
1.00 to 5.00 GALS./HR.
MODEL D4
3.00 to 12.00 GALS./HR.

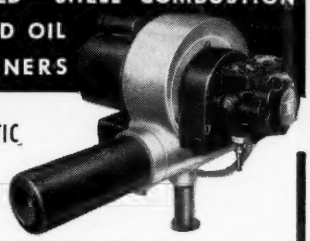
1. Fully Automatic
2. Self Cleaning Nozzle
3. Self Lubricating
4. All Electric Operation
5. Pays for itself from savings
6. Burns the cheaper No. 5 oil

RAYFIELD
AUTOMATIC

HEAT RECLAIMERS

1. Low in Price—Automatic—Easy Installation
2. Installs on Boilers, Furnaces or Stoves
3. For use with Coal, Gas, Oil or Wood
4. Increases output of ANY gravity warm air furnace
5. Heats Basements, Play Rooms, Garages, etc.
6. The hotter the stack—the more heat reclaimed
7. Saves wasted heat now going up the chimney

RAYFIELD—SHELL COMBUSTION
HEAD OIL
BURNERS
for CATALYTIC
OILS TO
#3 GRADE
2 MODELS
1.00 to 3.00 GALS./HR. CAPACITY



1. Shell Head Economy 12 to 15% CO_2
2. Clean boilers with perfected combustion
3. Burns Catalytic oils easily
4. Quiet—No Vibration or pulsation
5. Cuts user's oil bills 14 to 36%
6. The ideal replacement oil burner

C. L. RAYFIELD COMPANY • 2010-18 SO. HALSTED ST. • CHICAGO 8, ILL.

Margins and Markets

(*Continued from page 56*)

was selling on a premium of 60¢ and 80¢ a hundred, if he had sold on the major's posted price, he would have been operating in the red during this period by some 40¢ or more per hundred gallons. The individual returns of the various dealers who supplied information for this study show that nine out of the twelve would have been in a loss position of from a few cents per hundred to 50¢ or 60¢ per hundred gallons. In the present study, one dealer, in spite of the premium, showed a loss, and another dealer was just over the break-even point.

This study raises an interesting conjecture. If these better dealer operations would be in a loss position selling on the majors posted price level, how is the major making money on his retail operation? It can be safely assumed that he isn't and that his allocations of cost to heating oil distribution are faulty.

Item	TABLE 1 *Percentages of Sales*	TABLE 2 *Costs or Selling Prices per 100 Gallons*
Net Sales	100%	$12.00
Cost of Goods Sold	75%	9.00
Gross Margin	25%	3.00
Expenses		
Selling, Operating & Delivery	13%	$ 1.60
Administrative	7%	.85
Total	20%	$ 2.45
Operating Profit	5%	$ .55

Let us examine the tables as prepared by Professor Cannon, CPA, of the College of Business Administration, University of Washington and certain of his comments regarding ranges in operation.

In *Table 1,* the data are expressed as percentages of sales. In *Table 2,* the same data appear on a per-hundred-gallons basis. These are averages for the twelve dealers submitting figures.

Net Sales

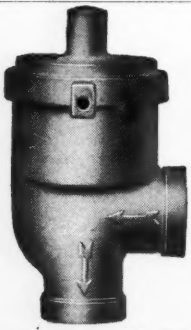
The figure $12.00 is the average selling price per 100 gallons for both stove and furnace oil. Variations among dealers are traceable to the size of the average delivery—reflecting price differentials that exist for quantity deliveries.

Cost of Goods Sold

This average is a composite of costs of all oil handled.

Gross Margin

The highest gross margin reported (all grades together) was $3.61 per 100 gallons, the lowest, $1.94, being influ-



PREFERRED
Anti-Syphon Valves
APPROVED BY
UNDERWRITERS' LABORATORIES, INC.

For Oils Up To No. 5—Valves C5 and C10 are available in ⅜" and ½" sizes.
For Oils Up To and Including No. 5—Valves B5 and B10 are available in ¾" and 1" sizes. (1" size is built up from ¾" size with fittings.)

Permits pumping of oil but closes to prevent syphoning in case of suction line break.

PR-173

PREFERRED UTILITIES MFG. CORP.
1860 BROADWAY, NEW YORK 23, N. Y.

ORAN
SHALLO-WELL
OIL-FIRED FLOOR FURNACES
Only 34 inches high
BTU CAPACITIES OF
★ 50,000 ★ 60,000
★ 70,000
Write for Details!
ORAN
ORAN COMPANY
2230 S. THIRD STREET
COLUMBUS 7, OHIO
Underwriter's Approved

McCORKLE 412 PKG. SET

A NEW LOW COST CONTROL

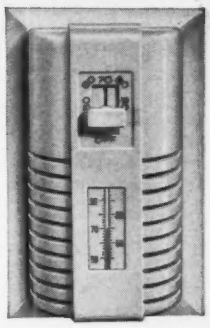
For Natural Draft Burners

Easy to install—just plug it in. No licensed electrician required.

Emergency operating lever—automatically resets.

Accurate dependable Thermostat with positive night cut off.

HIGH QUALITY—LOW PRICE



D. H. McCORKLE CO. Box E, Station A, Berkeley, Calif.

enced by the type of oil handled.

Expenses

Total expenses averaged $2.45 per hundred gallons or approximately 20% including $1.60 of selling, operating and delivery expense and $.85 of administrative expense. The ranges here were from $1.00 to $2.00 for the former and administrative expenses from $.40 to $1.16 per hundred gallons.

Net Profit

Deducting from the average gross margin on sales (weighted by the higher apparent margin on small sales of stove oil) of $3.00 the average total expenses of $2.45, the remaining average operating profit is $.55 per 100 gallons—or about ½¢ per gallon. The net results for the twelve dealers vary from a low of $.03 per hundred gallon *loss* to a high of $1.16 per 100 gallons profit. These are *operating* profits *before taxes*, interest or miscellaneous adjustments not comparable between different operations.

NOTE: Professor Cannon, in determining averages used figures of all operators and struck the median of the range. Had he used weighted averages for the *industry* the operating profit before taxes, interest, etc. would have been considerably lower, probably nearer to 35¢ per 100 gallons. The purpose of this study was to view the industry not in its worst light but on an average operating basis. We, therefore, can assume that these figures show the industry in its best position.

We think the averages of the dealers, as indicated by Table 1 and Table 2, are extremely significant. They prove conclusively that the dealer cannot continue to exist under the present conditions which prevail in the market. The major has exacted an unconscionable premium for his product, from both the dealer and the homeowner, in the light of oil price levels in effect in this area prior to and during the war.

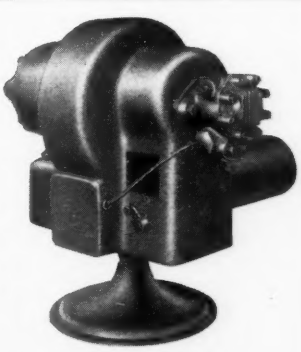
With economic conditions as they are today, the suppliers have maintained these high prices in the face of softening markets all over the country. If the major suppliers in this market are to adopt a semblance of a realistic attitude, their marketing policies should be changed in the following ways:

(1) In order to maintain healthy dealer relations, they should stop the practice of posting prices that will in effect dictate future retail price levels of the dealers. (2) They should withdraw immediately from marketing in these communities entirely. There are ample independent dealers to handle the market. (3) They should recognize that their wholesale pricing practices have established dealer costs that are untenable in relation to tomorrow's selling prices. They should not have to be reminded of the necessity for better dealer discounts or margins. (4) Serious consideration should be given to a price reduction at the wholesale level to bring the Pacific Northwest prices into line with market prices in the rest of the country.

This is not an appeal. It is a statement of fact and unless these changes in

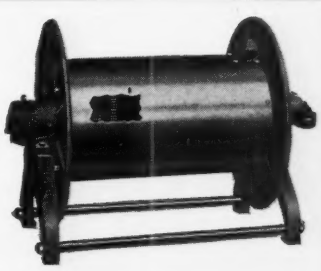
MODEL AL AUTOMATIC OIL BURNER

Modern design, providing extreme beauty, efficiency and practicability. Featuring qualities and economy together with simplicity of construction and operation.



WEATHERALL ENGINEERS, INC.
387 CHARLES STREET
PROVIDENCE 4, RHODE ISLAND

Speed!!
your Fuel Oil deliveries with a
POWER HOSE REEL
Note simplicity in design!



Hand Operated Hose Reels also available.
Your Inquiries Are Welcome.

R. H. WISHMAN CO.
204 W. UTICA ST. BUFFALO 9, N. Y.

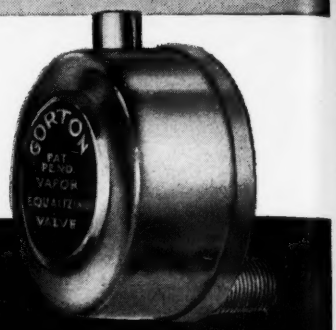
GORTON *Gives Guaranteed* EVEN HEAT DISTRIBUTION

WINS SATISFIED CUSTOMERS . . .

The Gorton System of Vaporizing and Equalizing existing steam heating systems for automatic heating provides quick automatic equal distribution of heat to every room . . . The flow of heat is automatically controlled so that all rooms receive equal distribution of heat.

NO PIPING CHANGES REQUIRED . . . GETS RID OF THE COLD ROOM PROBLEM

GET THE FACTS . . . WRITE TODAY! . . . FOR BULLETIN NO. 115D



GORTON HEATING CORP.

Manufacturers of High Grade Heating Equipment Since 1887

CRANFORD NEW JERSEY

marketing policy are put into effect, dealer-supplier relations will reach a new all time low. We have no quarrel with the major oil companies on their tremendously high profits. For the industry to be strong—to expand—to increase both use and availability of product, profits should be commensurate with investment in plants and facilities.

We have a definite quarrel with their apparent lack of realism, however. On one hand they publish reports of tremendous profits, yet quickly point out that "costs of operation have increased," stress declines in "unit" profits and apparently blandly ignore that distributors have experienced similar increased "costs of operation." The distributor is supposed to handle these increased costs without any appreciable betterment of his margin position, in some instances on a lower spread than he formerly received and at todays product cost at half the percentage return.

The heating oil distributor is the "forgotten man" in the equation. On today's market he is a contributor to the profit position of the major oil marketer. He has been forced into this position by the major's dominance of the retail price level through retail postings and direct competition.

At present, with the national oil supply picture definitely in a surplus condition, with general economic conditions slowing down, and commodity prices reflecting these conditions in lower levels, competition in oil heat marketing will intensify. Competition we welcome. It is the lifeblood of our economy. A dictated marketing level tends to magnify ills in the day-by-day working relations of the distributor and his supplier. We have reached the saturation point of present conditions. The next move, and it must be immediate, is up to the major oil companies.

◈

NATIONAL RADIATOR CO., Johnstown, Pa., in bulletin No. 540, entitled "Invisible Warmth," pictures National Aero convectors for one pipe steam, hot water, vapor and vacuum heating systems. Dimensions, connection data, E.D.R. ratings and roughing-in measurements are presented for all models. Seven types of enclosures also are described, accompanied by dimensions, roughing-in data and installation suggestions.

END 672, 4 cycle, 6 cylinder, 150 hp diesel engine, is featured in a catalog available from Mack Trucks, Inc., New York 1, N. Y. Liberally illustrated with drawings and photos, the text presents in non-technical language the advantages of automatic timing, controlled combustion and fuel distribution. Complete table of specifications is included.

OWENS-CORNING FIBERGLAS CORP., Toledo 1, Ohio, has released "A Comparative Study of Air Filtering Costs in Central Systems." The 4-page folder contains data on the cost of air filtration, with comparative figures on installation and maintenance costs of cleanable units and replacement type air filters. A form is included to calculate comparative costs for a specific installation.

Sundstrand OIL BURNERS

WRITE US FOR COMPLETE INFORMATION

THE "CUSTOM-BUILT" LINE FOR FORTY-NINE

FLANGE OR FOOT MOUNTED • FIRE TESTED • PRECISION MADE

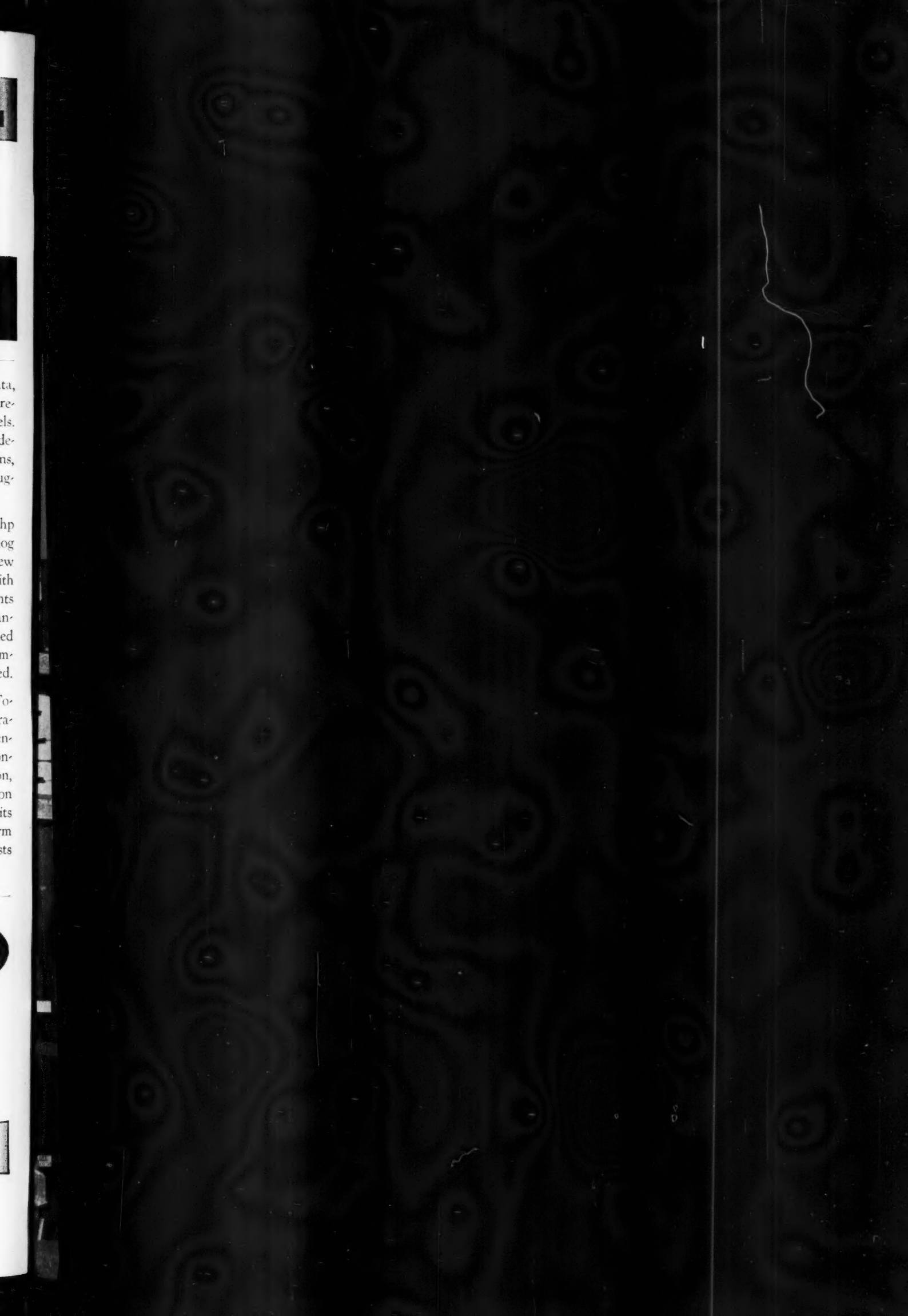
SUNDSTRAND ENGINEERING CO.
ROCKFORD, ILLINOIS

HERE IT IS!
The New Handy Package

CLEAN SWEEP SOOT REMOVER

Speeds up Service Calls
and
Builds Customer Goodwill

For Coal, Gas, Vaporizing Rotary or Gun Oil Burners, Stoves, Furnaces and Boilers.

LOOK FOR THE BROOM ON THE PACKAGE

CLEAN SWEEP COMPANY
3045 Rolfe Road - Lansing, Michigan
ASK YOUR JOBBER OR WRITE US FOR DETAILS TODAY